DOCUMENT RESUME

ED 429 388 EC 307 126

TITLE	The Emotional Drama of Giftedness. Conference Proceedings of the Annual Conference of the Society for the Advancement of Gifted Education (SAGE) (9th, Calgary, Alberta, Canada, November 6-7, 1998).
INSTITUTION	Calgary Univ. (Alberta). Centre for Gifted Education.; Society for the Advancement of Gifted Education, Calgary (Alberta).
PUB DATE	1998-11-00
NOTE	65p.
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Acceleration (Education); Educational Strategies; Elementary Secondary Education; *Emotional Development; Females; Foreign Countries; *Gifted; Individualized Instruction; Internet; *Interpersonal Competence; Life Satisfaction; *Social Development; Student Characteristics; *Talent
IDENTIFIERS	Alberta; *Positive Disintegration Theory

ABSTRACT

This proceedings focuses on "state-of-the-art" knowledge regarding social-emotional development, parenting issues, achievement issues, accelerative practices, individualized program planning, Alberta Education policies, educational technology, Dabrowski's Theory of Positive Disintegration, and other issues as they related to the unique needs of gifted and talented individuals. Individual presentations included: (1) "Intensity in Gifted Students" (Cheryl Ackerman); (2) "Detailed Description of the Just Ducky Project" (Nancy Brown); (3) "Teaching Students Who Are Gifted and Talented: Book 7 of Programming Students with Special Needs" (Janneke Frank and Jennifer Aldred); (4) "Understanding Gifted Children's Intense Emotionality: Sensitivity" (Sal Mendaglio); (5) "The Galileo Centre: Enhancing Student Learning through Supporting Innovation and Professional Development" (Brant Parker and Maureen McCashin); (6) "Acceleration: Strategies and Benefits" (Michael Pyryt); (7) "A Look at Evaluating Non-Intellective Areas of Giftedness" (Linda Sabatini); (8) "The Gifted in Cyber Space: Resources for Parents, Teachers, and Students" (Rosina Smith and Barbara Brydges); (9) "Individual Program Planning for Gifted Students: The Why and How" (Rosina Smith and Lillian Tickles); (10) "A Brief Overview of Dabrowski's Theory of Positive Disintegration and Its Relevance for A Gifted Population" (William Tillier); and (11) "Eminent Canadian, Finnish, and Korean Women: Reflections on Life Satisfaction" (Carolyn Yewchuk and others). Each presentation includes references. (CR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 429 388

BEST COPY AVAILABLE

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

2

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Lupart

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

THE EMOTIONAL DRAMA OF GIFTEDNESS 1998

CONFERENCE PROCEEDINGS

9th Annual SAGE Conference
The Society for the Advancement of Gifted Education

Conference Proceedings produced by
The Society for the Advancement of Gifted Education
c/o Centre for Gifted Education
University of Calgary
170 Education Block
2500 University Drive N. W.
Calgary, AB. T2N 1N4

THE EMOTIONAL DRAMA OF GIFTEDNESS

9th Annual SAGE Conference

The Society for the Advancement of Gifted Education (SAGE) is an umbrella organization consisting of the primary stakeholders in gifted education in Alberta: the Centre for Gifted Education (CGE) at the University of Calgary, the Gifted and Talented Education Council (GTEC) of the Alberta Teachers' Association, the Alberta Associations for Bright Children (AABC), and Alberta Education.

The 9th Annual SAGE Conference with a theme of *The Emotional Drama of Giftedness* was held at Lester B. Pearson High School, Calgary, November 6-7, 1998

The major focus of the Conference was to explore "state-of-the-art" knowledge regarding social-emotional development, parenting isssues, achievement issues, accelerative practices, individualized program planning, Alberta Education policies, educational technology, Dabrowski's Theory of Positive Disintegration, and gender issues as they relate to the unique needs of gifted and talented individuals. Once again, this year's conference sponsored a Youth Strand component which provided instructional activities for students ages 7-14.

We are pleased to provide this document, which represents summaries of selected conference sessions. For those participating in the 9th Annual SAGE Conference, we hope these Proceedings capture the spirit of the conference. It should be noted that Dr. Nicholas Colangelo's presentations will appear in the Spring 1999 AGATE (Journal of the Gifted and Talented Educational Council of the Alberta Teachers' Association).

We are grateful to our sponsors: Chapters Books (Dalhousie Station) and BIC Inc.
We hope you find these Proceedings informative.

Michael C. Pyryt
Linda Finlay
Conference Co-Directors

CONFERENCE PROCEEDINGS
1998
9th Annual SAGE Conference
'The Emotional Drama of Giftedness'

CONTENTS

1	*Cheryl Ackerman*	Intensity in Gifted Students
7	*Nancy Brown*	Detailed Description of the Just Ducky Project
13	*Janneke Frank* *Jennifer Aldred*	Teaching Students Who Are Gifted and Talented Book 7 of Programming Students With Special Needs
17	*Sal Mendaglio*	Understanding Gifted Children's Intense Emotionality: Sensitivity
21	*Brant Parker* *Maureen McCashin*	The Galileo Centre: Enhancing Student Learning Through Supporting Innovation and Professional Development
25	*Michael Pyryt*	Acceleration: Strategies and Benefits
33	*Linda Sabatini*	A Look at Evaluating Non-Intellective Areas of Giftedness
41	*Rosina Smith* *Barbara Brydges*	The Gifted in Cyber Space: Resources for Parents, Teachers and Students
47	*Rosina Smith* *Lillian Tickles*	Individual Program Planning for Gifted Students: The Why and How
49	*William Tillier*	A Brief Overview of Dabrowski's Theory of Positive Disintegration and Its Relevance For a Gifted Population
59	*Carolyn Yewchuk* *Seijo Aysto* *Seokhee Cho*	Eminent Canadian, Finnish and Korean Women: Reflections on Life Satisfaction

Intensity in Gifted Students

Cheryl M. Ackerman
West Coast Developmental Institute

The Theory of Positive Disintegration (TPD) (Dabrowski, 1964) is a developmental personality theory which posits five levels of development and three factors influencing development. The three factors are: (a) constitution or heredity, (b) environment or society, and (c) autonomous or self-determined; and the focus in this brief article is on one component of the first factor and its relationship to giftedness. The first factor, heredity, includes a set of five personality dimensions that are considered innate. These five dimensions are termed "overexcitabilities" (OEs) and exist in the following areas: Psychomotor, Sensual, Imaginational, Intellectual, and Emotional. They represent ways of experiencing stimuli more intensely, for longer periods of time, and with greater frequency. Dabrowski's research indicated that eminent and creative adults, as well as gifted students, had a greater abundance of OEs (Dabrowski, Kawczak, & Piechowski, 1970). The presence of OEs is an indication of a person's developmental potential, that is, their potential for personality development. While it is beyond the scope of this article to discuss personality development according to TPD and the role OEs play in it, the reader is referred to Bill Tillier's article in these proceedings, Piechowski (1975) and Silverman (1993) for further reading.

Dabrowski's OEs offer unique insights into the nature of giftedness. He noticed that many children, adolescents, and also adults, consistently reacted with extreme intensity to external and internal (i.e., intrapsychic) stimuli; and he referred to this tendency to respond intensely as "psychic overexcitability" (Dabrowski & Piechowski, 1977). Overexcitability "is a translation of the Polish word 'nadpobudliwosc' meaning 'superstimulatability,' the intended sense is of robust surplus and intensity" (Piechowski, Silverman, & Falk, 1985, p. 540). He used the term *over*excitability to emphasize the intensification of mental activity as well as the differential type of responding, experiencing, and acting distinguishable as characteristic forms of expression above and beyond the norm (Piechowski, 1986).

The five forms of OE can be thought of as dimensions of mental functioning (Piechowski, 1979). They are the basic components of developmental potential; special talents and abilities also contribute to one's developmental potential (Dabrowski, 1972). The five independent modes of functioning or experiencing are Psychomotor, Sensual, Imaginational, Intellectual, and Emotional OE (Piechowski, 1974; Piechowski & Colangelo, 1984). The following are descriptions of the five OEs:

Psychomotor overexcitability is characterized by an organic excess of energy which manifests itself as a love of movement, marked enthusiasm, rapid speech, and increased capacity to be active. Impulsiveness, pressure for action, compulsive organizing, and competitiveness are also expressions of Psychomotor OE.

Sensual overexcitability is experienced as heightened sensory pleasure and is expressed as desires for comfort and luxury, being admired and in the limelight, and as the appreciation of refined beauty. Other manifestations include simple sensory pleasures derived from such things as touching objects (e.g., fabric, tree bark, skin), the taste of food, and the smell of anything from gasoline to an apple orchard in full bloom. Also, appreciation of beautiful objects, writing styles, and words are considered expressions of Sensual OE.

Imaginational overexcitability in its purest form is expressed through vividness of imagery, rich association, use of metaphor in verbal expression, strong and sharp visualization, and inventiveness. Other forms are vivid and detailed dreams or nightmares, fear of the unknown, predilection with fantasy and magic tales, animistic and magical thinking, and poetic creativity.

Intellectual overexcitability must first be distinguished from intelligence. For example, intelligence is expressed in the ability to solve math problems, while Intellectual OE is expressed in the love of solving math problems. Persistence in asking probing questions, avidity for knowledge, discovery, and theoretical analysis are manifestations of Intellectual OE. Other expressions include: a sharp sense of observation, independence of thought (often expressed in criticism), symbolic thinking, a capacity and desire to search for knowledge and truth, and conceptual and intuitive integration.

Emotional overexcitability is a function of the way relationships are experienced, and can be expressed as strong attachments to people, things, or places, as well as, one's relationship with oneself. Piechowski (1975) explained an important aspect of Emotional OE: Intensity and display of emotions are not sufficient to be considered a developmentally significant expression, the relationship feelings must be present. Characteristic expressions include deep relationships, strong affective memory, concern with death, and feelings of compassion and responsibility. Depression, need for security, self-evaluation, shyness, and concern for others are also characteristic expressions of Emotional OE (Piechowski,1975, 1986; Piechowski & Colangelo, 1984; Piechowski & Cunningham, 1985). Complex emotions, difficulty adjusting to new environments, and self-evaluation are also expressions of Emotional OE.

Piechowski (1979) suggested that these five forms of OE could be thought of as the main channels of perception. They have frequently been likened to color filters through which all stimuli, external and internal, reach a person (Piechowski, 1974). Each filter can be widely open, partially open, or almost closed; the size of the opening determines the quality and quantity of the information flow. Examples of different intensities of Emotional OE are: low, "I feel really high when I play football with my friends [boy, age 13]" and high, "When I feel really happy I feel like nothing can go wrong for the rest of my life....When I am really happy it is more so than other people I know. When I am quite happy I am so high that it seems like nothing could ever get me into a bad mood [boy, age 13]" (Falk, Piechowski, & Lind, 1994, p.7).

Also, these filters determine which stimuli an individual is capable of responding to, and in what way. An individual who shows signs of OE will normally have a dominant form accompanied by varying strengths of other forms (Dabrowski & Piechowski, 1977). "If more than one, or all five channels have fairly wide apertures, then the abundance and diversity of information (that is, simultaneous experiencing in different modes) will inevitably lead to dissonance, conflict, and tension" (Dabrowski & Piechowski, 1977, p. 32). While it will not be elaborated upon here, there is agreement in the literature that such dissonance, conflict, and tension are the substrates of the developmental process and enrich one's mental development (Dabrowski, 1972; Dabrowski & Piechowski, 1977; Piechowski, 1979).

Possessing single or multiple forms of OE has major implications for a gifted person. Dabrowski (1972) suggested that reality is seen in a stronger and more multisided manner by those possessing either one or several forms of OE; and that "reality for such an individual ceases to be indifferent but affects [him] deeply and leaves long lasting impressions" (p. 7). Schiever (1985) noted that OEs affect an individual by making concrete stimuli more complex, enhancing emotional content, and amplifying every experience.

What does this all mean as a parent or a teacher of gifted children? It means that you will be working with people who are likely very intense in a variety of ways. It means that these intensities will not go away, they may become repressed in a nonaccepting environment, however, they will continue to affect the inner life of the overexcitable person. It means that people with similar or different OEs at times will work in harmony and at others will clash. As is the case for most individual characteristics, there are exciting and challenging aspects to them. It means that it is worthwhile to assist overexcitable people in learning how to value, as well as cope, with their intensities. Gaining an understanding of OEs can help a parents, teachers, counselors, and children understand complex inner motivations and why certain conflicts may continue. Awareness can then lead to the support and validation of these fundamental individual qualities, a response essential for healthy development.

The following section provides some exercises and things to think about for people living with or working with overexcitable individuals. First, in order to better understand other people, it is worthwhile to look at your own intensities and the intensities of the people you are concerned about. Therefore, take some time to consider which of the five OEs you believe you have and how strong you feel they are. Do the same for your family members or students. You may also want to contemplate the following: Which overexcitability would you most like to have? Which overexcitability would you least like to have? Describe a few things that are wonderful about having OEs. Describe a few things about OEs that are difficult. Think about how OEs can be supported and used constructively in the classroom or at home.

There are several general and specific strategies for working or living with overexcitable people (many of these were taken from the materials of Sharon Lind, Consultant).

General Strategies

- Accept the child as is: Accept "bizarre" descriptions and expressions of feelings; Welcome alternative ways of viewing and doing things that do not interfere with other people.
- Use and teach clear verbal and non-verbal communication skills: Verbal: Listening, Responding, Questioning, Telephoning, Problem Solving, Writing; Nonverbal: Gestures and Postures, Interpersonal Distance (space) and Touch, Facial Expressions, Tone of Voice, Pitch, etc., Rhythm and Use of Time, Style of Dress
- Help child become aware of own behaviors: To understand the impact of their sensitivity and behaviors on others; To understand which behaviors may be unacceptable, distracting, or inappropriate at times
- Teach child to be responsible for his/her behavior: Use natural and logical consequences; Teach about locus of control and how to effect change; Develop signals with selected students to advise them of successful/unsuccessful behaviors and for them to tell you of their needs
- Teach about stress and stress management: Teach children to recognize tension in themselves — to anticipate problems or behaviors; Help child create a comforting environment; Remember stress will exacerbate these intensities; Teach simple management strategies: Talk about your feelings — provide and talk about "feeling words" - Relaxation techniques - Exercise and diet - Meditation and visualization - Assertive behavior - Asking for help - Organizational and time management skills
- Provide places for children to work with fewer distractions
- Remember, the classroom is not reflective of the "real world" — adults usually have more choices about their environment and work habits
- Allow time to pursue passions: NEVER remove passions as consequences; Cultivate gifted/ talents
- Use the expression of tension in positive ways — make the chatterbox a reporter, etc.

Specific Strategies

Psychomotor

- Allow time for activity/movement — before, during, and after
- Find activities/movements that are acceptable to child and those in the surrounding environment
- Provide time for spontaneity — open-ended, free-wheeling activities

Sensual

- Create environment that limits offensive stimuli and maximizes comforting stimuli
- Provide opportunities for limelight
- Provide time to dwell in their delight

Imaginational

- Help child to differentiate between imaginary and real world
- Help child to use imagination to function in the real world
- Provide opportunities for imagination exploration

Intellectual

- Help child find answers to questions
- Help child find ways to act on his/her concerns — to feel effective
- Help child understand how criticism is taken
- Remember not to treat child like small adult

Emotional

- Accept all feeling and their intensity
- Teach child to anticipate physical and emotional responses and prepare for them
- Consider attachments when requiring change

References

Dabrowski, K. (1964). *Positive disintegration.* Boston: Little, Brown, & Company.

Dabrowski, K. (1972). *Psychoneurosis is not an illness.* London: Gryf.

Dabrowski, K., with Kawczak, A., & Piechowski, M. M. (1970). *Mental growth through positive disintegration.* London: Gryf Publications Ltd.

Dabrowski, K., & Piechowski, M. M. (1977). *Theory of levels of emotional development: Volume I - Multilevelness and positive disintegration.* Oceanside, NY: Dabor Science.

Falk, R. F., Piechowski, M. M., & Lind, S. (1994). *Criteria for rating levels of intensity of overexcitabilities.* Unpublished manuscript. University of Akron, Akron, Ohio.

Piechowski, M. M. (1974). Two developmental concepts: Multilevelness and developmental potential. *Counseling and Values, 18*(2), 86-93.

Piechowski, M. M. (1975). A theoretical and empirical approach to the study of development. *Genetic Psychology Monographs, 92,* 231-297.

Piechowski, M. M. (1979). Developmental potential. In N. Colangelo & R. T. Zaffrann (Eds.). *New voices in counseling the gifted* (pp. 25-57). Dubuque, IA: Kendall/Hunt.

Piechowski, M. M. (1986). The concept of developmental potential. *Roeper Review, 8*(3), 190-197.

Piechowski, M. M. & Colangelo, N. (1984). Developmental potential of the gifted. *Gifted Child Quarterly, 28*(2), 80-88.

Piechowski, M. M. & Cunningham, K. (1985). Patterns of overexcitability in a group of artists. *Journal of Creative Behavior, 19*(3), 153-174.

Piechowski, M. M., Silverman, L. K., & Falk, R. F. (1985). Comparison of intellectually and artistically gifted on five dimensions of mental functioning. *Perceptual and Motor Skills, 60,* 539-549.

Schiever, S. (1985). Creative personality characteristics and dimensions of mental functioning in gifted adolescents. *Roeper Review, 7*(4), 223-226.

Silverman, L. K. (Ed.) (1993). *Counseling the gifted and talented.* Denver: Love, Publishing.

Additional Reading List

Hague, W. J. (1986). *New perspectives on religious and moral development.* Edmonton, Alberta: University of Alberta.

Kurcinka, M. S. (1991). *Raising your spirited child.* New York: Harper Perenial.

Nelson, K. (1989). Dabrowski's Theory of Positive Disintegration. *Advanced Development,* 1-14.

Cheryl M. Ackerman, Ph.D.
The West Coast Developmental Institute
2853 - 168th Street,
White Rock, BC V4P 2V9
Canada

Institute: wcdi@smartt.com
Cheryl M. Ackerman, Ph.D.: ackerman@smartt.com
P. Susan Jackson, M.A.: radar@uniserve.com

Detailed Description of the Just Ducky Project
http://www.acs.ucalgary.ca/~nlbrown/duckytwo.htm

Nancy Brown
Calgary Board of Education

Student Project General Information

In November of last year a family donated their old computer to our grade one classroom. It was older than the model that I had recently acquired and being new at the 'world of computers,' I was a little nervous about opening Pandora's box. I hooked up the computer, wanting to see if the children could work with the programs and within seconds, the children were rallying for a spot, telling each other how to "get into" programs. After the initial excitement, the children suggested we schedule groups on the computer to make it fair. For three days they participated in groups to "play on the computer." The computer was like a magnet; attracting larger groups than scheduled. On one of the days the children were working in a drawing program. They had drawn seven penguins standing in a row, and had discovered that they could change the size of the penguins by changing the number in the "view scale" box. Soon they had one baby penguin, then another. When another child suggested they use different numbers they began to create penguins of all sizes. Working together they gathered books on penguins, played with perspective and tried to duplicate what they saw. Over the next week there was much debate, discussion and activity surrounding their new discoveries. This initial incident brought me to thinking about how the computer could be used in our classroom.

Objectives

Currently the children went to computers for twenty minutes a week. I wondered, "Wouldn't it be neat to use computers in a whole new way in the classroom? A way that encouraged this natural discovery, sharing and creating of ideas?" I remembered Papert (1993) talking about the possibilities for learning with a group of young children. He observed that with the utilization of the sophisticated technology, children could discover how giraffes sleep with the push of a button. I wanted this for my grade one students. I wanted them to travel and explore other environments, create meaning and "get" computers in a new way.

I began my search by looking a CD ROMs and internet sites but found little in terms of something that would work for all the children in the classroom. I went to conferences and seminars, but again could not find something that would use their own experiences to create something new. In the interim I worked with my school district to secure a computer that would hold internet capabilities, in hopes that I would find something for the children. In February, after enrolling in a course, I found the answer. After creating my own web page, I would create one for the children. We were going to raise ducks in the spring—why not put the study on the internet?

Methods and Procedures

I decided that the content of the web site should be "gimmick free." I used simple fonts and text and I made a billboard size replica of the site to use in the classroom. I hoped that by navigating on the billboard, (similar to playing turtle in LOGO) the children would have an increased awareness of the site. I received written permission from a web illustrator to use an illustration of a duck, which would become an icon for the study. I signed the page "from the grade one students" because I wanted to foster a sense of student ownership. I hoped to put up photos of the study (when I learned how to do that) and hoped that the study would be a reference for other teachers. I was aware of strict district guidelines regulating the design of school-based web pages so I decided to post the site on my personal home page.

I wanted the children and teachers to record and compare data on the site. Participants in the study would begin raising the ducks at the same time, in different locations, and communicate with each other using technology.

Special Materials and/or Equipment

Through another project that I was working on at the time, I was fortunate to find a teacher at a distant school who was interested in participating. I met with the teacher and a member of her administrative team to plan and brainstorm ideas. I showed them the site, and they were both excited about the possibilities of working together on the Internet.

The grade one teacher had a little experience with the Internet but felt that with support she could be fully involved.

After that meeting I rushed back to my school and met with the other two grade one teachers and our administrative team. They were aware of my project but had not yet seen the site. They thought it was great and were thankful that the work had been done in regard to designing the site, meeting with the other school, and getting support from other administrative teams. We worked through more ideas to post at the site. We decided to get freshly laid duck eggs so we could follow the study for the entire incubation period of 28 days. With the support of the district technical director I asked for help in posting pages for data collection. My technical director jumped through some bureaucratic hoops and a week later his supervisor was creating web pages! All I had to do was link his work to my web site page, and wait for the duck eggs. Well, not exactly just wait. I had to find some hardware, find an Internet hook-up, inform parents, and get authorization forms from the district. As it turned out written approval was not necessary as the district committed time and resources to the project once they had seen it on the Internet. I handed out district-based authorization forms during parent teacher interviews. This gave me the opportunity to promote the project and involve the parents. They were very enthusiastic and looked forward to seeing their children work with computers. In fact, when I

asked for volunteers to work on the site with the children on a daily basis, I had more volunteers than days left in the teaching year. This was the beginning of terrific parental support.

We had committed to starting our eggs on May 6th making the time frame very narrow. It was mid-April and we still needed to find another incubator, make a candler (to observe the embryonic stages), get Internet hook-up, and find a computer. I borrowed a home-made incubator made out of a fish tank, got two seniors involved in making candlers and went back to the administration. With one week left, I was allowed to take a new computer from the lab, and hook it up to an existing network. The hook-up was about ten feet from the classroom allowing us access in an open area off the library. It meant rearranging the entire children's book section, but several staff members pitched in and we got the job done. My last hurdle was securing time in the computer lab that was traditionally booked at the beginning of the year. We juggled our schedules and found that during the study, the children could access ten 'new' machines (those with Internet capabilities) for about an hour a day in May and have full access in the afternoons for the entire month of June.

Evaluative Methods

In order to gather meaning from the participants' point of view, samples of data were collected from students, teachers, parents, administrators, district technical advisors, and e-mail participants. The written student and teacher data, graphs, charts, student questions and journal entries were stored at the Just Ducky web site. (http://www.ucalgary.ca/~nlbrown/ducky)

The teachers contributed to lesson plans and a written journal during non-teaching times. The children contributed data to the site daily, and entered their own online journals beginning in mid-June.

The children all kept written journals of the experience. We decided that the children would write in their journals as events unfolded. We hoped that the journals would be a natural expression of the experiences. The children's journals were posted at the site.

I used ethnographic techniques to analyze all the student journals. In the first two weeks, I read the entries and categorized the students written comments (e.g., happiness, anticipation). I recorded pertinent student observations as they applied to each category and identified themes that occurred in their writing. Six weeks later, I reread all the entries and categorized the comments again. I transferred the information to word processing documents and tallied the number of occurrences, checking to see if the themes changed.

I maintained a file of notes from meetings with teachers, administration, and district personnel and kept all e-mail communication. I kept a folder of the children's artwork, notes and stories that the children created during the course of the study.

I interviewed a random sample of the grade one children involved in the study at my school, and videotaped the interviews. I used a questionnaire with the children and recorded their answers. I kept the records of what the children liked most about the web site, by recording the order of which they chose links on the site. At the completion of the study, I sent an evaluation form to parents of the student participants, and asked my colleagues to identify important elements from the study.

The data collection was not comprehensive in that data collection at the other school was not consistent with the data collected at our school. Due to time constraints and scheduling it was not possible for me to collect data at the other school. Technical problems also precluded e-mail participation but the student journals were sent to me to use for analysis.

After collecting all the data I was truly amazed that the children put so much of themselves into the study. The data helped me see the importance of working toward something I knew to be better and more meaningful.

General Comments

From the first day the eggs were set in the incubators, visitors began to arrive. What I thought was a busy place, was about to get busier. Every day, children would peek into the grade one classes to see the eggs. Because we had decided to raise a 28-day hatch, instead of getting the eggs when they were viable (3 days from hatching), there was much more time to observe the eggs. By the end of the project many children from other classes had seen the embryonic development, and some had seen the ducks hatch. What started as a grade one project, grew to involve the entire school community and potentially the world. Many parents came in at lunch or after school. One parent, after talking to his son at lunch came to the school in the middle of the afternoon to hold an egg. He had never felt a duck kick. When he heard and felt life from inside the egg, he whispered "It kicked me!"

I expected a high level of enthusiasm from within the community but I had not anticipated the multitude of people we met from outside the school. Each day, we felt immersed in the bigness and blueness of it all.

My students and I grew very close as we experienced exciting changes together. The school board got involved in making several series of web pages and they began to send news bulletins to other schools about the web site. They contacted the media and at the end of June we were on TV. I went to stores in the neighboring community and showed them the web site. They donated materials to build the brooder and provided snacks for the Duck's birthday party—200 cupcakes. The children toured the site with visitors daily and our work was included in a study being written by a University student. At every turn, children were writing down the web address, and giving to it someone new.

I had put a note on the page inviting people to send us e-mail. At the time I thought we would get one or two letters from parents who had computers at home. The site had only been up one day when

we got our first e-mail letter! Then we got two more e-mail letters, and all of a sudden we were meeting e-mail friends from all over the world! The children got maps and globes from the library and we started learning about people in different places, ducks in Hong Kong and South Africa, fish in the Florida Keys and birds in our own back yards. Our e-mail friends started to ask questions and we responded with great enthusiasm. Reading the morning mail often became research projects that lasted several hours. The children even began writing letters to the class using computers at home or in their parents' place of business.

The children were delighted with their new connections and all of a sudden, in the space of one week, they wanted to change things on the site. They decided that it might be better if we had some jokes. This innocent comment evolved into a major learning experience; namely the students now decided what was to be posted on the web site. In essence, the site had become theirs.

Hours were spent adding entries from their journals to the site, checking to see that every participant (all 103 of them) had one entry posted over the term of the project. In mid-June I asked them to identify one journal entry that they most wanted on the net. Craig said "My journal is so good, I want all of it." This was followed by choruses of "me too!" and we decided that all of the journals in their entirety would be posted. The children settled for giving me time to do the work over the summer, but you can bet they checked for their work by September 1st. The hierarchy had been turned upside down. The children were giving me homework!

One morning, our principal came by to tell us to check the eggs. He casually suggested, "You should make a bulletin board of all the things you are doing, to show how the site works and to show what you're learning." By recess, the children had made a plan for their bulletin board, grouped themselves based on interests and got on their paint shirts. The parent helper mixed paint and I started searching for boxes for two boys who wanted to make a 3D computer to display on the bulletin board. The boys ended up using a full Kleenex box and cut a hole in the front. When I asked if they wanted to take out the Kleenex, they said, "No, it's a new kind of computer you can put in hundreds of disks at once." The Kleenexes were the disks!

The Just Ducky Project enabled very young learners to access the world through e-mail capabilities through authentic learning activities. Our grade one students were able to communicate, share and create new meaning. Through an integrated curriculum, the children learned about writing and reading, life cycles, data management, the nature of science, and the caring and nurturing aspects of raising ducks. They continue to be very proud of their work and their web site.

This project has enabled teachers to integrate and connect dynamic learning experiences to curriculum while working as a collaborative group. It has opened many doors for dialogue surrounding the effective use of computers in our school, community and system and has shown teachers that as a team, many things are possible.

The Just Ducky Project has helped other teachers see the potential of collaborative projects and has invited many to join the project—at all grade levels. Through my work, I have been able to work with other teachers securing time to help them develop their own ideas for classroom applications. In January our entire school will be following the Empty Quarter Adventure—imagine 500 children involved in this online study! (http://www.alwaysadventure.net/)

My role throughout has been one of learner, observer, leader, follower, teacher, colleague. As well as being flexible in my planning, I needed to connect the content of the study to curriculum while acknowledging student voice. I hoped to model the fact that I could guide others in finding their own answers instead of being "all knowing."

For me, the Just Ducky Project was a vehicle that helped to bring out the intuitive common sense knowledge about teaching and learning. Through the children's involvement and success it reaffirmed my beliefs that all children, regardless of age or grade are capable creative learners.

The children's project can be found at
http://www.acs.ucalgary.ca/~nlbrown/duckytwo.htm
or
http.//www.2learn.ca

Teaching Students Who Are Gifted and Talented
Book 7 of Programming Students With Special Needs

Janneke Frank / Jennifer Aldred
Calgary Board of Education

I. Overview of the Alberta Education Document as a Context for Generative Curriculum

The Alberta Education Definition of Giftedness

- views the term 'gifted' as a broad, evolving concept, rather than a fixed label or stable score
- values *potential* and *possibility,* in addition to demonstrated abilities, behaviours, and performance
- acknowledges a wide range of abilities, rather than fixed criteria in a designated domain
- ensures that appropriate, challenging opportunities be provided to develop, enhance, and extend learners' individual gifts and talents.

Conceptions of Giftedness

- Reference to Marland, Renzulli, Gardner, Sternberg, Treffinger, Gagne, Stanley, Feldhusen, and Betts

Identification

- It is essential that the emerging, inclusive definition of 'giftedness' be congruent with identification processes, as well as with the corresponding curricular options; as identification, assessment, and evaluation procedures shift from fixed scores and concrete indicators, to include potentiality, talent, and possibility, programming options are also transformed.
- The document reflects the merging of intellectual and affective factors which must be considered in both identification procedures and in finding viable programming options.

II. Generative Curriculum: Connection to Gifted Education

- Curriculum differentiation is essential in challenging highly able learners and in transforming our classrooms into spaces which embrace change, diversity, and complexity
- Inquiry-based, process-oriented, student-directed learning is central to the evolving field of gifted education, and depends upon the development of *generative unit topics*—topics with complex personal, disciplinary, and global connections
- The following strategies for teaching and learning integrate philosophies central to both gifted education and generative curriculum:

- differentiation
- self-directed enrichment projects in passion and strength areas
- tiered assignments
- multiple, varied instructional paths
- program individualization and extension
- authentic assessment
- collaborative evaluation

III. Demystifying 'Generative Curriculum'

Naming what is already going on in so many of our classrooms. Generative teaching and learning entails

- involving students in the collaborative planning process, rather than relying solely on methodical lesson plans
- building in opportunities for student choice
- honouring individual learners' unique voices and visions
- exposing the multiple layers of a text or a concept, resisting the impulse to reduce, simplify, or impose a fixed, univocal meaning
- acting as a MEDIATOR in students' learning, enabling children to make sense of their experiences, to make connections, and to integrate the new with the known.

Implication for Teaching: Rather than focusing strictly on content delivery, teachers must

- develop a substantial knowledge base about learning and development, in order to recognize what students are thinking and what they are ready to learn
- be attentive to students' spontaneous transformations in thought and understanding, so as to take advantage of reactions, and seize teachable moments
- plan collaboratively with students, gaining a sense of students' needs, difficulties, interests, and areas requiring growth or extension
- set up active learning tasks that engage students in personally relevant, purposive work
- spend substantial time moving through the classroom to work with individuals and small groups
- ask students to reflect on their choices, actions, and learning, to explain what they did, share their methodologies, and question their assumptions
- guide students to new tasks or resources when they have mastered a concept, are ready to extend themselves, or desire to change direction in their path of discovery.

Implications for Curriculum

- Envisioning a curriculum that takes learners where they are, values the seeds of possibility within each student, and allows learners to bloom and blossom from their own authentic roots

- A Generative Curriculum is a curriculum which begins with the student—it honors prior knowledge and personal context; it nurtures the deeply PERSONAL process of learning; it depends on an individual learner's point of connection
- A Generative Curriculum
  - is defined by the ACTIVITY of meaning-making
  - is a combination of possibility, potentiality, and process
  - is an open system rather than a pre-determined destination
  - focuses on dialoguing, negotiating, and interacting
  - EMERGES as students and teachers interact within the learning community
  - is a student's personal process of inquiry and discovery; foundational 'truths' are often questioned or reconceptualized in this personal process.

Developing a Generative Curriculum

- The first step in "planning" or developing a Generative Curriculum is acknowledging what a paradoxical endeavor it is. Linear, prescriptive, step-by-step lesson plans are the antithesis of a process-oriented, individualized curriculum. And yet, there must be some degree of RIGOR or coherence to loosely structure an individual's discovery process.
- It becomes important to generate some overarching goals. These goals are not meant as linear objectives or predetermined, controlling outcomes. Rather, they structure and guide inquiry. Such goals are often oriented to particular skills or habits of mind.
  - Critical thinking skills
  - Higher level thinking skills
  - Recognition of relationships and patterns
  - Ability to deal with multiple voices and diverse perspectives
- It is then crucial to consider topics with high generative potential—topics that are open enough to allow for student choice, voice, and ownership, and which accommodate the guiding skills or habits of mind. Topics which are:
  - central to the field of inquiry
  - critical to understanding the field and its central questions
  - engaging
  - relevant to individual learners and to the world
  - accessible at many levels
  - easily connected to other topics
  - can be entered from different contexts
  - have a limitless quality—inherent complexity, inconsistencies, and diverse perspectives
  - inspire further research
  - bear relevancy to other subject areas
  - elicit critical thinking and questioning

- The remainder of curriculum EMERGES as the students explore and pursue a path of personal interest, making meaningful connections with their own life. Essential principles underlying generative curriculum include:
  - Element of student choice, ownership
  - This requires individual points and levels of entry
  - A sense that the results are not pre-determined...that students are navigating their own path
  - A sense of discovery—strangeness
  - Broadened concept of PRODUCT
  - Mastery—expertise, creating public projects
  - Reflective discussion with audience
  - Experiential—authentic, purposeful participation or immersion in topic
  - PASSION—the critical piece

IV. Sharing Examples of Generative Teaching and Learning

- Generative Curriculum merges head and heart—intellect and affect—recognizing the asynchrony and emotional intensity of gifted students.
- Excerpts from students' writing: the generative process as it unfolds

V. Break Into Small Discussion Groups to Explore Different Sections of the Document

Understanding Gifted Children's Intense Emotionality: Sensitivity

Sal Mendaglio
Centre for Gifted Education • University of Calgary

Gifted children often exhibit intense emotionality that is both positive and negative in nature. Such emotional displays pose a challenge to parents and teachers. These displays are often bewildering to the adults concerned. A multifaceted view of sensitivity among gifted persons (Mendaglio, 1995) is proposed as means of understanding intense emotionality among many gifted children. Some suggestions for parents and teachers are offered at the conclusion of this article.

Heightened Sensitivity an Important Affective Characteristic

Among the affective characteristics associated with gifted persons, heightened sensitivity is of central importance in understanding the emotional experience of gifted children. The importance of sensitivity is captured colloquially by the statement: Gifted children feel more because they see more. "Seeing more" is the essence of heightened sensitivity. Sensitivity is first and foremost a keen awareness of self, others, and the environment (Silverman, 1993). Being so aware results in both positive and negative experience for the gifted child. Such awareness is associated with a genuine appreciation of aesthetic qualities of the natural environment and the fine arts (Baska, 1989) among young children. Empathic understanding of other persons' plights is also a positive effect of heightened sensitivity. Highly sensitive children are very perceptive. In interpersonal communication with parents and others, subtle verbal and nonverbal cues are detected and interpreted. On the negative side, a child's heightened sensitivity leads to feelings that are easily hurt, over-reactions to the perception of criticism, and being overwhelmed by experiencing the emotional states of others. Adults concerned with the welfare of gifted children need to attend to heightened sensitivity because of its potential for affecting the emotional experiencing of gifted children.

Conceptualising heightened sensitivity must reflect its complexity. There are at least four facets, which are associated with heightened sensitivity. Awareness of self and other persons forms the substrate of sensitivity in the context of human interaction. The content of such awareness includes both cognitive and emotional material. In practice this means that a gifted person has the potential to be highly conscious of one's own thoughts and feelings. This potential extends to an understanding of perspectives of other persons and to being empathically connected to their feelings.

Heightened sensitivity is defined as a keen awareness of self and others in both the cognitive and emotional domains. Cognitive sensitivity leads to self-awareness and an appreciation for other persons' points of view, and an understanding of the subtleties of interpersonal communication. Emotional or affective sensitivity results in intense emotional experiences in the person, and empathic connection to other persons and their emotional states. There are four discrete, though interrelated, facets in this perspective on heightened sensitivity: self, other, emotion, and cognition.

Heightened Sensitivity and Self

When applied to self, heightened sensitivity (HS) results in self-awareness referring to knowledge of self, as well as the capacity to reflect upon self. This can manifest itself, as a gifted child's being painfully aware of self. Also, this can be seen in children's strong statements about their preferences—they express with certainty what they do want, and what they do not.

On the emotional side, HS magnifies the experience of both positive and negative emotions. To understand the implications of HS on emotional experience of the gifted child, distinguishing between emotional state and emotional experience is useful. Emotional experience is defined as the awareness of one's emotional state (Lewis & Michalson, 1983). While this distinction applies throughout the lifespan, it is more readily understood by focusing on infancy and early childhood. When we observe an infant cry or in a general state of distress, this view of emotions would state that the infant is not experiencing emotions per se. Young children do have emotional states—the bodily changes occurring with emotions. With the onset of language and the ability to reflect on self, emotional experience becomes possible. In other words, emotional states are innate; emotional experience hinges on the person's ability to reflect upon self—to focus one's attention inward. Since emotional experience rests on awareness, HS creates greater emotional experience for gifted children.

The heightened emotional experience of gifted children has many manifestations. It is at the root of children's over-reacting to feedback about one's self or one's level of performance. In the positive domain, these experiences include feeling overwhelmed by the beauty seen in nature, for example, being awestruck by a sunset.

On the negative side, they can feel very sad or very disappointed in their inability to perform a complicated task on their first attempt.

Heightened Sensitivity and Others

Cognitive HS with reference to others enables the gifted child to engage effectively in what developmental psychologists call perspective taking (Berk, 1989). This refers to the understanding of others' thoughts and feelings based on their verbal and nonverbal communication. HS suggests that gifted children can often accurately infer the internal states of others more than their nongifted counterparts. Voice quality, facial expression, eye contact, gestures and body language are among the cues that form grist for the inference-generating mill.

Related to perspective taking, empathy refers to the affective dimension of HS directed at other persons. In this use of term, empathy is more akin to emotional contagion, which is the meaning adopted in developmental psychology. That is, empathy refers to experiencing the emotions of others. Gifted children observe another child who is sad, and they tend to feel the sadness too. Parents are stressed, and the gifted child feels it as well, sometimes in a very intense manner.

Empathy as emotional contagion is different from empathy as used in counselling or teaching literature. In a therapeutic context, empathy is essentially an attempt of the counsellor to understand the internal states of the client and communicate that effectively to the client to further the client's self-understanding and acceptance. While an effective counsellor will naturally be affected by emotional contagion, that is not the purpose of empathy in a therapeutic context. In fact too much emotional contagion will interfere with the counselling process. Consider a counsellor or teacher who is high on "raw" HS. A depressed client or student is encountered. Through emotional contagion, the counsellor or teacher will experience the depression as well. In such scenarios, as the counsellor or teacher becomes equally depressed, his or her effectiveness as a helping professional is seriously jeopardised. Empathy in counselling and teaching is a combination of perspective-taking and interpersonal communication.

A child's ability to empathise, as with the other facets of HS, leads to both positive and negative consequences. Empathy motivates the child to engage in altruistic behaviour with other children and adults. It helps the child become more understanding and tolerant of diversity in people. On the negative side, the child may become overwhelmed by the additional emotionality that she or he picks up in other persons. This may extend to the broader world community. It may result in a child's worry and preoccupation with the plight of children in poverty-stricken countries, and similar global concerns.

Suggestions for Parents and Teachers

A multifaceted view of sensitivity should emphasise the complexity of heightened sensitivity. HS has been presented as being composed of at least four facets: cognitive, affective, self, and other. HS is fundamentally a sharp awareness, which leads to both negative and positive consequences for the gifted child. As a result, HS poses a challenge to parents and teachers. Some guidelines for parents and teachers flow from a multifaceted view of HS.

1. Monitor your own emotionality when interacting with gifted children.

2. Develop an emotional style in disciplining students that includes appropriate emotional reactions (e.g., Be irritated not angry; do not "lose it").

3. Avoid using children as your emotional sounding board.

4. Do not minimise children's emotional expression.

5. Deal with the emotions first, and then engage in problem solving.

6. Offer reassurance when child expresses emotions such as sadness, disappointment, and frustration with self.

7. Let the emotional expression run its course.

8. Teach children appropriate emotional expression through direct instruction and modelling.

9. Last and most important, accept heightened sensitivity for what it is—part and parcel of giftedness. It may go underground, but like other aspects of giftedness; it is there for life.

References

Baska, L. K. (1989). Characteristics and needs of the gifted . In J. F. Feldhusen, J. VanTassel-Baska, K. Seeley (Eds.), *Excellence in educating the gifted* (pp. 15-28). Denver: Love Publishing.

Berk, L. E. (1989). *Child development.* Boston: Allyn & Bacon.

Bryant, V. B. (1989). An index of empathy for children and adolescents. *Child Development, 53,* 413-425.

Lewis, M., & Michalson, L. (1983). *Children's emotions and moods: Developmental theory and measurement.* New York: Plenum.

Mendaglio, S. (1995). Sensitivity among gifted persons: A multifaceted perspective. *Roeper Review, 17*(3), 169-172.

Silverman, L. K. (1993). The gifted individual. In L. K. Silverman (Ed.), *Counseling the gifted and talented.* (pp. 3-28). Denver: Love Publishing.

The Galileo Centre: Enhancing Student Learning Through Supporting Innovation and Professional Development

Brant Parker / Maureen McCashin
Banded Peak School • Rocky View School Division No. 41

The Galileo Centre is a working professional development site for Alberta teachers committed to improving student learning through innovative teacher practices, classroom-based research and the effective use of technology.

The Galileo Centre provides teachers from across the province with an opportunity to participate in a unique one-year collaborative teaching and learning experience at Banded Peak School near Bragg Creek in the Rocky View School Division.

Participating educators teach students for part of their paid time, integrating leading edge technology into daily teaching practice. The remainder of their time is invested in conducting research, and exploring new ways of improving the teaching and learning process. After their year at the Centre, participating teachers return to their communities to share their expertise with other teachers and to implement new initiatives.

The Centre came to life as a result of grassroots discussions among educators and parents about the need and possibilities for educational reform when they learned that Rocky View School Division had received funding for a new school. With the support and encouragement of the Rocky View School Division, a team of stakeholders worked for three years to develop the concept and bring the vision of this unique professional development centre to life.

The idea was to remove constraints imposed on teaching and learning by traditional models so that innovative educators could advance teaching practice, thereby transforming the education system from within. The team also wanted the Centre to address the current professional development gap between access to technology and active exploration of the educational potential of technology. The Galileo Centre is soundly based on a thorough review of current research and team visits to examples of excellence across Canada and into the United States.

Galileo Initiatives

The Galileo Centre opened in March of 1997. It is funded through contributions of human and material resources from businesses and organizations that are excited by the mission and focus of the Centre. Specifically, these partners have made possible the following initiatives:

- ✓ Three-year funding for a Ph.D. research fellowship
- ✓ U of C Education Faculty working with staff in the School
- ✓ "Facilitating" teachers available to work with staff during the day in the daily practice of teaching and learning and integrating technologies
- ✓ University of Calgary ^íedit opportunities in association with classroom-based research
- ✓ Integration of industry expertise through the 12 active partnerships
- ✓ Access to leading edge technology
- ✓ Time allocated to conduct research
- ✓ Opportunities to publish in collaboration
- ✓ Undergraduate and Graduate students working along with core teachers
- ✓ Project teachers from different school divisions working together in one School
- ✓ An education reform network

In addition to these successful initiatives, most of which are ongoing, the Centre is also proud of the following successes:

- ✓ Courses on Teaching and Learning With Technology offered to groups of teachers from throughout Southern Alberta
- ✓ Making children's work available through the web for others to use in their research and learning
- ✓ Over 10,000 web site visits
- ✓ Integrated Units of Practice provided online to teachers throughout the Province
- ✓ A research and study group involving six schools for implementation of the new Western Canada Protocol in Mathematics
- ✓ Bringing technology to seniors using student tutors
- ✓ A national online mathematics initiative modeled on Writers in Electronic Residence and developed by the Galileo Fellow
- ✓ Investigating "What's basic" in reformed teaching of mathematics through a Canada Council Grant
- ✓ A Student Technology Mentorship program for other students and teachers
- ✓ Many presentations to educational organizations

More information on the Galileo Centre can be obtained by contacting the centre.

web site: www.rockyview.ab.ca/bpeak
e-mail: bparker@rockyview.ab.ca
gladstone@rockyview.ab.ca
telephone: (403) 949-2292 ext. 223
fax: (403) 949-4067

Acceleration: Strategies and Benefits

Michael C. Pyryt
Centre for Gifted Education • University of Calgary

Overview

The purpose of this article is to describe ways of challenging gifted students through accelerative practice. Despite the overwhelming amount of favorable evidence, Daurio, 1979; Gold, 1965; Kulik & Kulik, 1983; programming experiences for the gifted encourage enrichment over acceleration. Gold (1965) wrote, "No paradox is more striking than the inconsistency between research findings on acceleration and the failure of our society to reduce the time spent by superior students in formal education" (p.238).

Stanley (1979) has classified enrichment as consisting of four types: busy work, irrelevant academic enrichment, cultural enrichment, and relevant academic enrichment. Busy work, which involves giving the student additional repetitive work is not enriching at all. The only lesson it teaches is for the student to work slower. Process Skills training involving activities intended to improve creative problem solving and decision-making abilities are deemed irrelevant because they don't pay attention to the particular academic needs of a student. Cultural enrichment, which involves taking gifted students to museums and ballets, is viewed as appropriate for appropriate for all children. Relevant academic enrichment would permit a third grader, who has mastered the third grade mathematics curriculum to begin studying the fourth grade curriculum. Unless the student's achievement is well-documented and combined with acceleration, this academically-relevant intervention merely results in a temporary postponement of boredom.

There are several benefits of providing accelerative opportunities. The most obvious benefit is the provision of appropriate curriculum challenge. Acceleration will reduce the amount of time a child is forced to study concepts that he or she already knows. Another benefit of acceleration is the opportunity for flexible curricular options. If a student could combine the content of two years into one year, there would be additional time in future schedules to pursue additional areas in the curriculum. There are also advantages in terms of reduced educational costs for both the school system and the student. If students spend less time in school, the cost of educating them will decrease. Currently in Calgary, schools are adopting year-round school scheduling tracks to accommodate more students without building additional school buildings. If acceleration were a common practice, the need for these administrative arrangements would decrease. Costs savings to the student can be quite dramatic when the accelerative approach saves the costs of university tuition. In addition to cost savings, acceleration can provide competitive advantages. As students compete for places in competitive undergraduate and graduate schools, their accelerative accomplishments will help them compile an impressive application package. Finally, there are benefits in terms of self-esteem. If an

eighth grade student completes a university course with a grade of *A*, that accomplishment will help that student internalize an "ability" attribution. Rather than explaining the accomplishment, in terms of luck or simply hard work, the student would likely recognize ability as an instrumental factor.

This Proceedings paper will highlight the pioneering accelerative model developed by Julian Stanley and his colleagues at The Johns Hopkins University. It will also describe the Iowa Acceleration Scale (Assouline, Colangelo, Lupkowski-Shoplik, & Lipscomb, 1999) to determine if students would benefit through acceleration.

Smorgasbord of Accelerative Opportunities

The smorgasbord of accelerative opportunities model pioneered by the Study of Mathematically Precocious Youth (SMPY)at The Johns Hopkins University provides much evidence for the effectiveness of accelerative practices. (Benbow, Perkins, & Stanley, 1983; Brody & Benbow, 1987; Kolitch & Brody, 1992; Swiatek, 1993; Swiatek & Benbow, 1991a, 1991b). After using a talent search approach (Assouline & Lupkowski-Shoplik, 1997; Cohn, 1991; Olszewski-Kubilius, 1998; Stanley, 1976, Stanley, Keating & Fox, 1974; Van Tassel-Baska, 1984), which involves giving tests of sufficient difficulty to identify superior mathematical reasoners, SMPY encourages students to take advantage of numerous accelerative opportunities (Benbow, 1991; Stanley, 1977, 1979, 1991; Stanley & Benbow, 1986). Accelerative possibilities are limited only by the ability and motivation of the identified students. The more capable and motivated a student is, the more "radical" the accelerative possibilities.

SMPY has pioneered the use of fast-paced mathematics classes, whereby students learn several years of mathematics in one year (Bartkovich & George, 1980; George & Denham, 1976). Benbow, Perkins and Stanley (1983) reported that participants in SMPY's first two fast-paced mathematics classes scored significantly higher in mathematics portion of the Scholastic Aptitude Tests (SAT-M), expressed greater interest in mathematics and science, and accelerated their education much more than nonparticipants. Fast-paced classes can be geared to Advanced Placement exams (Mezynski, Stanley, & McCoart, 1983).). In Calgary, effective fast-paced math classes were implemented at F.E. Osborne Junior High School for several years (Pyryt & Moroz, 1992). Students completed the junior high math curriculum and Math 10 while in junior high school. In high school, they successfully completed Math 20 and Math 30 and had the flexibility in their timetables to pursue additional math classes or electives of their choice.

One of the most promising approaches for facilitating acceleration is the use of Diagnostic Testing followed by Prescriptive Instruction (DT-PI). This technique pioneered by Julian Stanley (1978, 1998) especially for mathematically and scientifically gifted students involves pretesting to determine a student's level of knowledge, analyzing errors to determine instructional needs, designing and implementing an instructional program to meet these needs, retesting using an alternate form of the initial test to determine mastery, and proceeding to the next level using the same approach

(Benbow & Lubinski, 1997). This approach has been successfully used to promote acceleration in both mathematics (Bartkovich & Mezynski, 1981) and science (Stanley & Stanley, 1986). During an intense three week summer institute, intellectually able students age 11-15 were able to learn the equivalent of a year of high school biology or chemistry of both using the DT-PI approach. Stanley (1998) suggests that computer programs could greatly facilitate the Diagnostic Testing - Prescriptive Instruction process. Followers of Renzulli implement a variation of the DT-PI approach when they use curriculum compacting (Reis, Burns, & Renzulli, 1992; Renzulli, Smith, & Reis, 1982; Starko, 1986) to shorten the time students spend mastering material.

At the high school level, the use of credit by examination is an effective way to accelerate one's progress in mathematics and science. One example of this approach is the Advanced Placement (AP) Program (Hanson, 1980). Students earn university credit based on their scores on an Advanced Placement examination. A grade of "3" on a 5-point scale will lead to the granting of credit at most universities. Selective universities require a grade of "4" or "5" before awarding credit. For students gifted in mathematics and science, there are examinations in calculus, computer science, biology, chemistry, and physics. The Advanced Placement Program provides content descriptions of the objectives that will be assessed on the Advanced Placement examinations. Nearly 10, 000 high schools worldwide offer courses geared to the content assessed on the AP examinations. Universities offer courses in summer institutes that prepare secondary teachers to instruct a specific AP course. Longitudinal studies have supported the effectiveness of AP courses for mathematically gifted students. Brody, Assouline, and Stanley (1990) found that Advanced Placement credits was the only statistically significant predictor of GPA, semesters on the Dean's list, and graduation honors in their study of early entrants at The Johns Hopkins University.

For some students, early entrance to universities (two years earlier than normal), part time university courses, correspondence courses and distance learning opportunities provide effective acceleration experiences. Students benefit from early entrance experiences (Brody, 1998; Brody, Assouline & Stanley, 1990; Brody, Lupkowski, & Stanley, 1988; Olszewski-Kubilius, 1995). In Alberta, the opportunity for early entrance will be affected by the opportunities for acceleration at earlier periods. At the University of Calgary, for example, students from Alberta are eligible for admission when they complete their Grade 12 coursework and diploma examination requirements.

Brody and Benbow (1987) have examined the effectiveness of the smorgasbord of opportunities model. Students who made use of accelerative options had higher college GPAs, won more honors, attended more selective colleges, and had higher career aspirations than students who decided not to make use of these accelerative options.

Iowa Acceleration Scale

Assouline, Colangelo, Lupkowski-Shoplik and Lipscomb (1998) have provided a counseling tool for evaluating the appropriateness of acceleration recommendations. There are four major

dimensions in their approach: academic ability and achievement, school information, interpersonal skills, and attitude and support.

In terms of academic ability and achievement, the best candidates for acceleration are students with measured IQ scores of at least 145 and measured achievement of 1.5 to 2.0 years above current grade level.

A variety of school information is used to determine the appropriateness of recommendations for acceleration. Acceleration is supported when the acceleration will result in change to a new school building, preferably a new school district. Students with excellent attendance records are better candidates for acceleration than those with a history of school absences. A student whose physical size is larger than students in the present grade is a better candidate for acceleration than a student whose physical size is smaller than students in the present grade. A student with greater motor coordination than other students in the present grade is a better candidate for acceleration than a student with lesser motor coordination than students in the present grade. Students among the oldest in the present grade are better candidates for acceleration than students who are among the youngest in a grade. Those who take leadership in school extracurricular activities are deemed better candidates for acceleration than those who refrain from participating in extracurricular activities. Students who demonstrate motivation by comprehensive completion of assignments are deemed good candidates for acceleration. Students who seek academic challenges are also viewed as good candidates for acceleration.

The interpersonal skills dimension examines factors such as participation in non-school extracurricular activities, relationships with peers, relationships with parents, emotional development, behavior, parent involvement, and grade placement of siblings. Students with leadership in non-school extracurricular activities such as scouts or church groups are better candidates for acceleration than those who don't participate in such activities. Students who have positive relationships with agemates and older peers are good candidates for acceleration. Students with excellent relationships with teachers are better candidates for acceleration than those who have poor relationships with teachers. Students with have a positive and realistic self-image regarding their abilities can benefit from acceleration. Students without a history of discipline problems are better candidates for acceleration than students with such a history. Students whose parents are committed to collaborating with school personel in meeting their academic needs are better candidates for acceleration than students whose parents lack interest or involvement in their child's school progress. Students without siblings are the best candidates for acceleration. Problems may arise if siblings are in the same grade or happen to be one grade above the current placement.

The attitude and support dimension involves factors such as student's attitude toward acceleration, school system support towards acceleration, and prior planning for acceleration. Acceleration is recommended when both the student and the school show enthusiastic support for acceleration. Ideally, extensive discussions with school personnel regarding the student's placement have ocurred.

Assouline (1997) provides an interesting case study to illustrate how the *Iowa Acceleration Scale* facilitates decision-making regarding acceleration.

Summary

This paper highlighted some of the major benefits of acceleration. The smorgasbord of accelerative opportunities model pioneered by Julian Stanley and colleagues at The Johns Hopkins University was described. This model has generated a significant amount of research documenting its effectiveness. The *Iowa Acceleration Scale* was introduced as a tool for facilitate discussion and decision-making regarding acceleration. It is hoped that SAGE participants and readers of this volume will use the information to advocate for acceleration where appropriate.

References

Assouline, S. G. (1997). Assessment of gifted children. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (2nd ed.) (pp. 89-108). Needham Heights, MA: Allyn & Bacon.

Assouline. S. G., Colangelo, N., Lupkowski-Shoplik, A., & Lipscomb, J. (1999). *Iowa Acceleration Scale.* Scottsdale, AZ: Gifted Psychology Press.

Assouline, S. G., & Lupkowski-Shoplik, A. (1997). Talent searches: A model for the discovery and development of academic talent. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (2nd ed.) (pp. 170-179). Needham Heights, MA: Allyn & Bacon.

Bartkovich, K. G., & George, W. C. (1980). *Teaching the gifted in the mathematics classroom.* Washington, DC: National Educational Association.

Barkovich, K. G., & Mezynski, K. (1981). Fast-paced precalculus mathematics for talented junior-high students: Two recent SMPY programs. *Gifted Child Quarterly, 25,* 73-80.

Benbow, C. P. (1991). Educating mathematically talented children: Can acceleration meet their educational needs? In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp. 154-165). Needham Heights, MA: Allyn & Bacon.

Benbow, C. P., & Lubinski, D. (1997). Intellectually talented children: How can we meet their needs? In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (2nd ed.) (pp. 155-169). Needham Heights, MA: Allyn & Bacon.

Benbow, C. P., Perkins, S., & Stanley, J. C. (1983). Mathematics taught at a fast pace: A longitudinal evaluation of SMPY's first class. In C. P. Benbow & J. C. Stanley (Eds.), *Academic precocity: Aspects of its development* (pp. 51-78). Baltimore: The Johns Hopkins University Press.

Brody, L. E. (1998). The talent searches: A catalyst for change in higher education. *The Journal of Secondary Gifted Education, 9,* 124, 133.

Brody, L. E., Assouline, S. G., & Stanley, J. C. (1990). Five years of early entrants: Predicting achievement in college. *Gifted Child Quarterly, 34,* 138-142.

Brody, L. E., & Benbow, C. P. (1987). Accelerative practices: How effective are they for the gifted? *Gifted Child Quarterly, 31,* 105-110.

Brody, L. E., Lupkowski, A., & Stanley, J. C. (1988). Early entrance to college: A study of academic and social adjustment during freshman year. *College and University, 63*(4), 347-359.

Cohn, S. J. (1991). Talent searches. In N. Colangelo & G. A. Davis (Eds.). *Handbook of gifted education* (pp. 166-177). Needham Heights, MA: Allyn & Bacon.

Daurio, S. P. (1979). Educational enrichment versus acceleration: A review of the literature. In W. C. George, S. J. Cohn, & J. C. Stanley (Eds.), *Educating the gifted: Acceleration and enrichment* (pp. 13-63). Baltimore: The Johns Hopkins University Press.

George, W. C., & Denham, S. A. (1976). Curriculum experimentation for the mathematically talented. In D. P. Keating (Ed.), *Intellectual talent: Research and development* (pp. 103-131.). Baltimore: The Johns Hopkins University Press.

Gold, M. J. (1965). *Education of the intellectually gifted.* Columbus, OH: Merrill.

Hanson, H. P. (1980). Twenty-five years of the Advanced Placement Program: Encouraging able students. *College Board Review, 115*, 8-12, 35.

Kolitch, E. R., & Brody, L. E. (1992). Mathematics acceleration of highly talented students: An evaluation. *Gifted Child Quarterly, 36*, 78-86.

Kulik, J. A., & Kulik, C. L. C. (1983). Effects of accelerated instruction on students. *Review of Educational Research, 54*, 409-425.

Mezynski, K., Stanley, J. C., & McCoart, R. F. (1983). Helping youths score well on AP examinations in physics, chemistry, and calculus. In C. P. Benbow & J. C. Stanley (Eds.), *Academic precocity: Aspects of its development* (pp. 86-112). Baltimore: The Johns Hopkins University Press.

Olszewski-Kubilius, P. (1995). A summary of research regarding early entrance to college. *Roeper Review, 18*, 121-125.

Olszewski-Kubilius, P. (1998). Talent search: Purposes, rationale, and role in gifted education. *The Journal of Secondary Education, 9*, 106-113.

Pyryt, M. C., & Moroz, R. (1992). Evaluating an accelerated mathematics program: A centre of inquiry approach. In K. A. Heller & E. A. Hany (Eds.), *Competence and responsibility (Vol. 2)—Proceedings of the Third European Conference of the European Council of High Ability* held in Munich (Germany), October 11-14, 1992. Göttingen: Hogrefe & Huber.

Reis, S. M., Burns, D., & Renzulli, J. S. (1992). *Curriculum compacting: The complete guide to modifying the regular curriculum for high ability students.* Mansfield Center, CT: Creative Learning Press.

Renzulli, J. S., Smith, L. H., & Reis, S. M. (1982). Curriculum compacting: An essential strategy for working with gifted students. *Elementary School Journal, 82*, 185-194.

Stanley, J. C. (1976). Identifying and nurturing the intellectually gifted. *Phi Delta Kappan, 58*, 234-237.

Stanley, J. C. (1977). Rationale of the Study of Mathematically Precocious Youth (SMPY) during its first five years of promoting educational acceleration. In J. C. Stanley, W. C. George, & C. H. Solano (Eds.), *The gifted and the creative: A fifty-year perspective* (pp. 75-112). Baltimore: The Johns Hopkins University Press.

Stanley, J. C. (1978). SMPY's DT-PI model: Diagnostic testing followed by prescriptive instruction. *Intellectually Talented Youth Bulletin, 4*(10), 7-8.

Stanley, J. C. (1979). The study and facilitation of talent for mathematics. In A. H. Passow (Ed.), *The gifted and talented: Their education and development* (pp. 169-185). (Seventy-eighth yearbook of the National Society for the Study of Education, Part I). Chicago: University of Chicago Press.

Stanley, J. C. (1991). An academic model for educating the mathematically talented. *Gifted Child Quarterly, 35,* 36- 42.

Stanley, J. C. (1998, May). *Helping students learn only what they don't already know.* Paper presented at the Fourth Biennial Henry B. & Jocelyn Wallace National Research Symposium on Talent Development,The University of Iowa, Iowa City.

Stanley, J. C. & Benbow, C. P. (1986). Youths who reason exceptionally well mathematically. In R. J. Sternberg (Ed.), *Conceptions of Giftedness* (pp. 361-187). Cambridge, UK: Cambridge University Press.

Stanley, J. C., Keating, D. P., & Fox, L. H. (Eds.). (1974). *Mathematical talent: Discovery, description, and development.* Baltimore: The Johns Hopkins University Press.

Stanley, J. C., & Stanley, B. S. K. (1986). High-school biology, chemistry, or physics learned well in three weeks. *Journal of Research in Science Teaching, 23,* 237-250.

Starko, A. (1986). *It's about time: Inservice strategies for curriculum compacting.* Mansfield Center, CT: Creative Learning Press.

Swiatek, M. A. (1993). A decade of longitudinal research on academic acceleration through the Study of Mathematically Precocious Youth. *Roeper Review, 15,* 120-124.

Swiatek, M. A., & Benbow, C. P. (1991a). A ten-year longitudinal follow-up of participants in a fast-paced mathematics course. *Journal for Research in Mathematics Education, 22,* 138-150.

Swiatek, M. A., & Benbow, C. P. (1991b). Ten-year longitudinal follow-up of ability-matched accelerated and unaccelerated gifted students. *Journal of Educational Psychology, 83,* 528-538.

VanTassel-Baska, J. (1984). The talent search as an identification model. *Gifted Child Quarterly, 28,* 172-176.

A Look at Evaluating Non-Intellective Areas of Giftedness

Linda Sabatini
Doctoral Student • University of Calgary

Introduction

The issue of evaluation remains central in any discussion involving education and giftedness. It is imperative that an understanding of giftedness and the practices of evaluation are reviewed. Only then can the evaluation of the non-intellective areas of giftedness be applied more appropriately.

Evaluating the non-intellective areas of giftedness is far more detailed than it might first appear. Initially, it is important to clarify what is meant by evaluation, its defining features, guidelines, and its relation to giftedness (e.g., programmes and specific areas). Second, what exactly is meant by a non-intellective area of giftedness? Third, one needs to define giftedness and identify which non-intellective areas are to be evaluated. One definition (Marland, 1972) and three models of giftedness will be used to review the non-intellective areas of giftedness and their subsequent evaluation formats. These are: Renzulli's Enrichment Triad (1991), Gagné's Differentiated Model of Giftedness and Talent(1996), and Gardner's Multiple Intelligences (1993). Fourth, a few evaluation measures are suggested for utilization in evaluating the non-intellective areas. Finally, the evaluation of the non-intellective areas of giftedness will be summarized.

Evaluation and Giftedness

There is an abundance of literature on the state of evaluation in the field of giftedness including evaluation for the identification of the gifted students and their programming. The reader is encouraged to review some of the excellent information and guidelines on evaluation practices provided by researchers in the field of giftedness (Buescher, 1984; Callahan, 1993; Renzulli, 1984).

Regardless of this insightful literature, there are numerous problems that plague the field. These involve: the practical applications of evaluation to gifted education, namely confusing programme evaluation with the evaluation of specific and limited areas of a programme; the overuse of outcome measures; few formative or internal evaluations; the failure to establish an evaluation design at the start of the programme; the limited availability of appropriate measures for use in evaluating the non-intellective areas in general and for elementary children; and untrained personnel conducting evaluations.

While any one of these points warrant further discussion, two main considerations prevail when deciding to apply evaluation to the area of giftedness. What comprises evaluation? What are the key guidelines for evaluating the areas of giftedness?

Evaluation and Related Terms

It is essential to distinguish between the evaluation of a programme (or programme evaluation) and the evaluation of specific areas of the programme, such as non-intellective areas. Presently, many of our gifted education programmes have been placed at unnecessary risk because specific area evaluations were reported as programme evaluations. While these may not represent true programme evaluations their reports inadvertently misrepresent the efficacy of the programme.

Understanding the terminology used in evaluation will facilitate one's approach to the task of evaluating the non-intellective areas of giftedness. Evaluation refers to detecting changes and meeting goals and objectives of a programme or aspect of a programme. Evaluation involves a more comprehensive review of the presage, process, and product areas of a programme. Obtaining the perspectives from many stakeholders and accounting for various impacting factors such as funding and materials also warrant addressing.

The focus of the evaluation could be on specific subject areas. A basic example in evaluating the mathematics area of a gifted programme involves identifying the mathematically gifted students using IQ measures (which are relatively stable scores of ability), measuring the effects of various methods used for instruction (field trips, simulation, mentors), and measuring students' achievement test outcomes.

Another related and comprehensive approach is assessment. This refers to the identification of features and various procedures in context (Gardner, 1993) or to information from ordinary performances (Ramos-Ford & Gardner, 1991). The Diagnostic-Prescriptive approach is an assessment using various tests to identify students needs and characteristics that are then used to develop the curriculum and instruction (VanTassel-Baska, 1980) or programme for gifted students.

There are numerous tests or measures which are restricted to specific rules or criteria, tend to be empirical-based, and are limited to decontextualized settings (Ramos-Ford & Gardner, 1991). Some examples include standardized tests, projective tests, observations, checklists, questionnaires, and self-reports. Measures are designed to identify specific characteristics such as IQ (e.g., WISC for mental disabilities) and personality (e.g., MMPI for pathology disorders). Measures reflect relatively specific and sometimes stable areas of functioning as with IQ scores which show little change over time or programme intervention. Achievement scores tend to be more sensitive to variability as with the acquisition of new knowledge in specific subject areas. These measures are limited in their purpose and hence in their application to evaluation.

Key Guidelines for Evaluating the Areas of Giftedness

A number of cautions have been raised regarding evaluation and its application. The following guidelines are noted for consideration in applying evaluation to the (non-intellective) areas of giftedness.

1. Assessment and evaluation are optimally conducted in context (Gardner, 1993).

2. The purpose of the measure(s) must have congruence with the area(s) under evaluation.

3. Fundamental considerations regarding the tests or measures used include their: reliability, validity, norms that include gifted samples, limitations of the test, ceiling and floor effects, purpose for which the measures were designed needs to be relevant for use in evaluating non-intellective areas (i.e., IQ measures were originally designed to diagnose mental disabilities not giftedness), limited designs that do not show changes over short or long periods of time and therefore cannot be use for tracking pre-post criteria or skills, formative and summative features, capacity to address the divergent needs of gifted students (particularly those underachievers and those with learning disabilities), intervening factors (such as resources, biases, social-economic status, test-taking skills, and culture).

There are numerous types of measures, each present their own limitations and strengths (e.g., projective verses standardized, and observations that may be objective or subjective). Features of measures that limit their interpretation and ability to show change (e.g., global scores vs subscale scores that tend to show changes and selection options such as YES or No vs Likert choices.

4. The utilization of a variety of approaches to evaluate individual students, groups of students, and specific areas, as well as for compiling information to review programming effects.

5. There are additional aspects of evaluation, such as cost-benefits that impact on the entire school (as with the Schoolwide Enrichment Model's Type I activities).

6. Few measures are available or designed for use in gifted programmes. More multifaceted approaches and additional studies are required for improving the evaluation of gifted programmes.

7. Evaluation has long been subjected to political and practical implications. Caution needs to be exercised to minimize the potential problems in taking such achievement test results and evaluating them beyond their merit onto teacher evaluation and school characteristics.

Prior to using any measure or test, it would be prudent to check their application to gifted students and their utilization in programme evaluations. Suggested references include the: Test Manuals, *Mental Measurements Yearbooks, Test Critiques*, ERIC and PSYCHLIT CD-ROM searches.

Non-Intellective Areas

The non-intellective areas refer to those other than the traditional verbal and quantitative areas represented in the IQ measure of intellectual ability or aptitude. The non-intellective areas include: personality (e.g., self-concept, leadership, locus of control), motivation, creativity, social, emotional, and spiritual areas of ability.

Models of Giftedness and Their Non-Intellective Areas

It is from the definition or model of giftedness that the non-intellective areas are derived and subsequently evaluated. Marland's, Renzulli and Reis's, Gagné's, and Gardner's models are presented with an example of their corresponding evaluation approaches.

Marland's (1972) definition of giftedness has six basic components. A few suggested evaluation approaches are noted beside each. General intellectual ability (*Canadian Cognitive Abilities Test and Weschler Intelligence Scales for Children*); specific academic aptitude (*Woodcock Johnson Achievement Test* and *Kaufman Achievement Battery for Children*); creative or productive thinking (*Torrance Test of Creative Thinking*); leadership ability (nominations and references listed in Sisk, 1985); visual and performing arts (artistic talent and references listed in Stinespring, 1991); and psychomotor ability (nominations and achievements).

The Schoolwide Enrichment Model- SEM (Renzulli & Reis, 1991) is based on Marland's definition and contains three components: task commitment, creativity, and above-average ability. A variety of evaluation forms are suggested for use in the SEM. Criterion based formats are used in the identification of gifted students and to meet specific programme goals (e.g., individual contracts, student evaluation, *Scales for Rating the Behavioural Characteristics of Superior Students*, planning guides, taxonomy of skill areas (type II), and independent projects (Type III). These formats can be applied to individual or group evaluations. These formats are adaptive to various contexts but tend to be limited to specific areas or parts of the programme (e.g., subject, project, and activity).

Gagné's Differentiated Model of Giftedness and Talent (1996) contains three primary components where the aptitude domains (i.e., intellective, creative, socioaffective, and sensorimotor) are impacted by various catalysts and result in the manifestation of talents in relevant fields (i.e., academic, technology, arts, social action, business, and athletics). This model incorporates a variety of existing evaluation formats and measures from the fields of education and psychology. For example, Motivation might be measured using the *Learning Process Questionnaire* (Biggs, 1987) and personality using measures of self-concept (Marsh, 1990; Mendaglio & Pyryt, 1995). The environment might be assessed using student or programme features and the inclusion of information from community members such as experts, peers, parents, and teachers. The talents or outcomes might be evaluated using achievement tests, criterion or norm referenced tests, and expert reviews).

Gardner's Multiple Intelligences (1993) contain seven and possibly eight intelligences or components. These are linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and "tentatively" naturalist (Klein, 1997, p.377).

Gardner advocates using alternative and multiple forms of assessment tailored to the context (i.e., educational programme) and the recognition of individual differences (e.g., cultural and developmen-

tal areas of giftedness). The application of a matrix of problem-solving and creativity using five types of problems was designed to demonstrate students interactions and competence (Maker, Neilson, Rogers, 1994). The Individualized Programme Plan approach can also be used to address programming areas and evaluate student's progress.

Suggested Evaluation Measures for Non-Intellective Areas

The definition or model of giftedness is needed to identify the non-intellective areas that will be addressed in the student's programming and evaluation. The models vary in the evaluation formats and measures recommended or even suggested for use. The following non-intellective areas are listed with some accompanying references or measures for use with gifted students. Personality areas might include various tests of personality (refer to the review by Rekdal, 1977). Self-concept might include such measures as the *Self Description Questionnaire* (Marsh,1990) or the *Pyryt-Mendaglio Self-Perception Scale* (Mendaglio & Pyryt, 1995). Motivation might be assessed using the *Learning Process Questionnaire* (Biggs, 1987).

A number of additional suggestions are also available. For example, observer's evaluation forms and gifted student's performance evaluation used in the Purdue Saturday & Summer Programs (Buchanan & Feldhusen, 1991). Various other methods which can be used for evaluation purposes include: standardized tests, reporting formats (self, parent, teacher, peer, expert), portfolios, and products (outcome or item). Bloom's taxonomy, and the affective taxonomy (Krathwohl, Bloom, & Masia, 1964), interviews, checklists, rating scales, questionnaires, skill based measures, criterion or norm referenced tests, process and product information, journals (qualitative information regarding themes and ideas), multimedia portfolios, computer programmes (e.g., hypercard project reports), journals, students' portfolios and presentations.

The areas of giftedness and evaluation are at their early stages of development. More empirical evidence and research is needed on the evaluation of gifted programmes and specific areas such as the non-intellective areas of giftedness. The following few summary points are noted for consideration in evaluating specific areas of giftedness and its programming.

1. Identify the model of giftedness and the areas of giftedness being addressed for the programme.
2. Determine entry level information about the gifted students engaging in the programme (e.g., needs, pre-skills, characteristics).
3. Identify the programmes goals and specific objectives.
4. Determine the methods (e.g., periodic checks/formative & summative and individuals involved) and measures used to identify changes in the participants (gifted students).
5. Identify and address information that may impact the outcomes (e.g., social-economic status, cultural background (recent immigrants), impairments (e.g., physical, hearing, or vision), measurement errors (e.g., ceiling/floor effects), test construction, reliability, validity, and purpose).

6. Utilize a model of programme evaluation especially at the planning or design stages of the programme's development. This can be adjusted and adapted accordingly as the programme evolves.
7. Utilize multiple measures and methods such as the collection of quantitative and qualitative data, the use of triangulation methods to support results and strengthen recommendations.

Summary

Evaluation involves a multifaceted approach designed to review an entire programme or specific areas of a programme. The non-intellective areas of giftedness are included in the specific areas. Understanding the importance of evaluation approaches and the recognition of key points regarding the congruences between the objectives for development and the purpose of the measures used to identify the changes will result in more relevant information for decision-making.

Identifying the definition or model of giftedness is important for any evaluation as it helps to define the goals, objectives, details, and features of the areas involved for development, specifically non-intellective areas. Currently, the non-intellective areas of giftedness lack the details necessary to pursue them more fully and thereby evaluate them more rigorously.

Numerous measures are available for use although few are designed for evaluating non-intellective areas of giftedness and few can stand alone. This necessitates the utilization of a variety of information sources (e.g., types of measures and participant feedback). This involves the collection of information at various periods of time to identify changes in the student's products and performances.

The evaluation of non-intellective areas of giftedness has great potential but presently it requires prudence and respect. Recognizing the powerful impact and the limitations of evaluation will help one avoid the problems presently encountered in evaluating IQ and achievement test scores beyond their purpose.

Conclusion

This paper presents a brief review and application of the evaluation of non-intellective areas of giftedness. While our definitions and models of giftedness are becoming more representative of the various manifestations of giftedness, there is little empirical evidence or research available to grasp the non-intellective areas and subsequently their evaluation in educational programmes. As a result, it would be prudent to remain informed about the evolving state of evaluation and the non-intellective areas of giftedness. This approach will eventually lead to the identification and development of more effective means to address the programming and practices in gifted education.

References

Programme Evaluation and Giftedness

Buescher, T.M. (1984). Thinking through the evaluation process: An interview with Dr. Joseph Renzulli. *Journal for the Education of the Gifted, 7,* 3-11.

Buchanan, N.K., & Feldhusen, J.F. (Eds.). (1991). *Conducting research and evaluation in gifted education.* New York: Teachers College

Callahan, C.M. (1983). Issues in evaluating programs for the gifted. *Gifted Child Quarterly, 27,* 3-7.

Callahan, C.M. (1993). Evaluation programs and procedures for gifted education: International problems and solutions. In K.A. Heller, F.J. Monks, & A.H. Passow (Eds.), *Research and development of giftedness and talent* (pp. 883-903). New York: Pergamon.

Ramos-Ford, V. & Gardner, H. (1991). Giftedness from a multiple intelligences perspective. In N. Colangelo & G.A. Davis (Eds.), *Handbook of gifted education* (pp. 55-64), Toronto: Allyn & Bacon.

Renzulli, J.S. (1984). Evaluating programs for the gifted: Four questions about the larger issues. *Gifted Education International, 2,* 83-87.

Van Tassel-Baska, J. (1980). Evaluation of gifted programs. In J. Jordan & J. Grossi (Eds.), *An administrator's handbook on designing programs for the gifted and talented* (pp. 111-128). Reston, VA: CEC/ERIC.

Models of Giftedness and Evaluation

Gagné, F. (1996). From giftedness to talent: A developmental model and its impact on the language of the field. *Roeper Review, 18,* 103-111.

Gardner, H. (1993). *Multiple intelligences.* NY: Basicbooks.

Klein, P.D. (1997). Multiplying the problems of intelligence by eight: A critique of Gardner's theory. *Canadian Journal of Education, 22,* 377-394.

Maker, C.J., Neilson, A.B., & Rogers, J.A. (1994). Giftedness, diversity, and problem-solving. *Teaching Exceptional Children, 27,* 4-18.

Marland, S., Jr. (1972). *Education of the gifted and talented. Report to the Congress of the United States by the U.S. Commissioner of Education.* Washington, DC: U.S. Government Printing Office.

Renzulli, J.S., & Reis, S.M. (1991). The schoolwide enrichment model: A comprehensive plan for the development of creative productivity. In N. Colangelo & G.A. Davis (Eds.), *Handbook of gifted education* (pp. 111-141), Toronto: Allyn & Bacon.

Measures for Non-Intellective Areas

Personality

Rekdal, C.K. (1977). In search of the wildduck: Personality inventories as tests of creative potential and their use as measurements in programs for the gifted. *Gifted Child Quarterly, 21,* 501-515.

Motivation

Biggs, J. (1987). *Student approaches to learning and studying.* Melbourne: Australian Council for Educational Research.

Affective

Krathwohl, D.R., Bloom, B.S., & Masia, B.B. (1964). *Taxonomy of educational objectives.* New York: David McKay Co.

Self-Concept

Marsh, H.W. (1990). *Self-Description Questionnaire II Manual.* Macarthur, Australia: Publication Unit, Faculty of Education, University of Western Sydney (Macarthur).

Mendaglio, S., & Pyryt, M.C. (1995). Self-concept of gifted students. *Teaching Exceptional Children, 27,* 40-45.

Leadership

Sisk, D.A. (1985). Leadership development: Its importance in programs for gifted youth. *NASSP Bulletin, 69,* 48-54.

Artistic

Stinespring, J.A. (1991). The quest to find an alternative way to identify artistic talent in black students. *Roeper Review, 14,* 59-62.

Linda Sabatini e-mail: lmsabati@ucalgary.ca

The Gifted in Cyber Space: Resources for Parents, Teachers and Students

Rosina Smith / Barbara Brydges
Centre for Gifted Education • University of Calgary

Educators recognize that with all students and with gifted and talented students in particular, there is a need to guide them to assume responsibility for their own learning; to emphasize problem solving and critical thinking and to strive for higher level thinking skills including, analysis, synthesis, and evaluation. Students need to develop skills to organize information; strategies for discerning what is relevant and what is not. They need to make connections between theory and practice, to examine trade-offs and risks and to collaborate through participation in group activities. This type of curriculum is process- rather than content-driven and encourages transformative learning. The utilization of technology is viewed as a critical ingredient in impelling this type of learning.

In order for scholarship to be relevant and purposeful the focus on technological education should be to equip students to use technology to improve the quality of many personal and professional technology-based decisions and to participate intelligently as informed citizens in the transition from an industrialized society to a post-industrialized service and information age. The use of the World Wide Web allows and invites students to be more active in formulating their own decisions and sharing their views with experts who are easily accessible. The Web also allows for an expanded view of mathematics, history, literature and technology. The information is in constant change and challenges the constant, static data that is found within textbooks.

The computer allows the gifted and talented student to use the word processor to generate research papers as well as databases. Spreadsheets, statistical and graphing components can also be created permitting the compilation, analysis and presentation of data which for the gifted student eliminates the more mundane task of collecting and plotting data which often causes gifted students to lose interest. Conducting literature searches using CD-ROM and/or internet application allows gifted students to delve more deeply into their area of passion. The computer also permits another type of product development through the use of multimedia presentations.

Exposing students to emerging technologies permits the gifted to acquire diverse technical skills through hands-on practical experience. These students can develop expertise in a given technology and apply it to curricular endeavors. The computer allows them to expand their learning environment beyond the confines of the classroom and to communicate more effectively and efficiently with peers. It allows gifted students to engage in mentorship and apprenticeship programs and to work at a pace commensurate to ability. This eliminates the often pedestrian pace that gifted and talented students find redundant and purposeless. Further, the World Wide Web permits gifted students to be 'plugged' into the global electronic community and allows them to look at the 'big' issues. It also provides the

opportunity to pursue the acquisition of another language by speaking directly with those who speak that language fluently.

In this type of learning environment the teacher serves as 'guide on the side' rather than the 'keeper of all knowledge' and invites students to assume responsibility for their own learning and to learn the necessary processes relevant to the twenty-first century. Parents become facilitators by creating an environment that fosters the use of technology within the home. Many students today are immersed in computer technology prior to their entry into school and therefore require that the computer be used as a tool to enhance and advance learning.

For computers to be used effectively in enhancing teaching and learning, educators need to determine what area of the gifted curriculum to target. They need to consider available resources, both human and material, and define the objectives and outcomes that are essential. Then, in collaboration with students and parents, a plan of action must be implemented. On-going evaluation should be included in the plan with the long term objective of implementing such a plan at a district level.

Within such plans might be the inclusion of a "webliography" which would provide web sites of interest to parents, teachers and gifted children. The Centre for Gifted Education at the University of Calgary has developed such a tool.

The Gifted in Cyber Space: Web Sites of Interest to Parents, Teachers and Gifted Children

Alberta sites

http://www.educ.ucalgary.ca/altagift
Gifted Education in Alberta

Created by the Centre for Gifted Education (**www.acs.ucalgary.ca/~gifteduc**) as a source of information about what's happening for gifted students in Alberta. Includes Alberta Education policies, program descriptions from Alberta school jurisdictions, and links to special schools for the gifted. It also contains many links to other sites on the internet, including all those on this "webliography".

http://www.freenet.edmonton.ab.ca/aabc
Alberta Associations for Bright Children

Describes the role and services of this provincial parent organization, including information about which cities have local chapters. Of special interest is the list of all the article reprints which can be ordered from the Bright Site Resource Library in Edmonton.

http://www.perpetual.net/gtec
Gifted and Talented Education Council of the Alberta Teachers' Association

Teachers of the gifted will want to check out the articles on the home page of this A.T.A. specialist council, and learn about the support and resources this organization can provide.

http://www.ecs.edmonton.ab.ca/tech/gifted
Edmonton Catholic Schools Gifted and Enrichment Home Page

As well as describing the provisions for gifted students in Edmonton Catholic Schools, Don Delaney has created a very good "link library" leading to other sites on the Net. Also some good tutorials on technical topics.

Research-based information

http://www.cec.sped.org/gifted/gt-menu.htm
Council for Exceptional Children, ERIC Clearinghouse on Gifted Education

ERIC is the branch of the U.S. Department of Education which indexes journals and documents in the field of education. The Council for Exceptional Children contributes the records for all special education materials, so their web site gives access to the gifted literature in the ERIC database, including the excellent ERIC Digests which provide authoritative summaries of various issues in gifted education.

http://www.gifteddevelopment.com
Gifted Development Center [Linda Silverman]

Linda Silverman is well-known for her interest in the emotional aspects of giftedness, the highly gifted, and gifted females. This web site provides access to a number of her articles, and summarizes what she and her staff have learned about gifted children in twenty years of doing assessments at her Denver clinic.

http://www.ucc.uconn.edu:80/~wwwgt/nrcgt.html
National Research Center on the Gifted and Talented

The NRC G/T is a major consortium of five American universities, several school boards and the U.S. Department of Education, with a mandate to sponsor research about gifted education. Its web site contains abstracts describing the findings of these research projects.

Focus on parents

http://www.ocsc.com/hoagies/gift.htm
Hoagie's Gifted Education Page

A remarkably comprehensive and well-organized web site with annotated, topically arranged links to almost anything of worth on the Web about gifted education, and references to relevant books as well.

http://www.gifted-children.com
Gifted Children Monthly Magazine

This electronic reincarnation of *Gifted Children Monthly* magazine operates on a subscription basis. Subscribers have access to a large file of articles, and can participate in a live 'chat room' hosted by expert James Alvino.

Professional development

http://www.ssco.esu.k12.oh.us/Demo/Gintro
Teaching the Talented and Gifted [online course]

This Web-based course, organized by the School Study Council of Ohio, is sub-titled "Educational and Psychological Approaches". It is taught by Dr. Ray Swassing, and the course, much like his textbook, seems to focus on the practicalities of teaching different subjects to gifted students.

http://www.utexas.edu/world/lecture
World Lecture Halll

Teachers who are interested in pursuing professional development via online learning can find out what courses are available on the Internet through this site. It is organized by field of study and links to pages created worldwide by faculty who are using the Web to deliver class material.

http://www.uni.edu/profdev/teachnet
Teaching with the Internet [online course]

Teachers who are interested in using the Internet more effectively in their classroom teaching might be interested in this online course from the University of Northern Iowa. It appears to be both popular and effective, judging by their registration statistics and by the Internet awards for online lesson plans won by their students.

Curriculum resources

http://www.kn.pacbell.com/wired/bluewebn/
Blue Web'N: A Library of Blue Ribbon Learning Sites

One way to find worthwhile lesson plans on the internet is to go to this site which gives awards to what they consider to be the best "learning sites" on the Web.

http://www.acs.ucalgary.ca/~dkbrown
Children's Literature Web Guide

Created by University of Calgary librarian, David Brown, this web site is widely praised for its comprehensive links to all worthwhile resources about children's literature on the Web. There is also access to his library's Doucette Index, which indexes both online and print suggestions for teaching individual children's books.

http://www.carolhurst.com
Carol Hurst's Children's Literature Site

Reviews of great books for kids, ideas of ways to use them in the classroom, suggestions for how to use children's books in teaching other subjects such as math.

http://www.sjsu.edu/depts/itl
Mission: Criticall

An interactive tutorial on critical thinking capable of familiarizing users with all the basic concepts of critical thinking. Through a self-paced series of exercises students begin to utilize the essential tools of intellectual analysis.

Fun stuff for kids

http://www.ocsc.com/hoagies/kids.htm
Hoagies' Kids and Teens Links

Links to chess sites, brain teasers, logic and math sites plus many others. Many of the links are to sites suitable for all kids, not particularly for gifted kids—but no doubt they enjoy *The Animorphs* too.

http://www.millville.cache.k12.ut.us/millville/teachers/TaG/kidsfun.htm
Kids' Fun from Millville Elementary School Gifted Page

An example of what some gifted kids in a Utah elementary school consider to be "fun" web sites to visit.

Individual Program Planning for Gifted Students: The Why and How

Rosina Smith / Lillian Tickles
Centre for Gifted Education • University of Calgary

"Our need for accomplishment across many different talent domains is too great for us to permit any students' strengths to be overlooked, disregarded or squelched" (Treffinger, 1998).

Few would argue with Treffinger's claim. Teachers and parents, in their respective roles, share a responsibility to identify and nurture the potential that will engender the achievement in fields of medicine, technology, engineering, education, the arts, and all other areas which contribute to the quality of life. The task raises a number of questions:

1. What characteristics of a learner should prompt parents and teachers to suspect exceptional talents and ability?
2. What steps might be taken to screen and identify these students?
3. How do we develop an individualized program plan that will reflect goals, objectives and learning activities based on specific needs?

The literature on gifted education offers several lists of characteristics relevant to the gifted and talented. Roets (1995) provides the following outline:

- having a natural talent and interest in one or more areas, and a great learning capacity within that area
- the capability of learning quickly in their area of talent(s) and requiring little repetition when learning new information in that area
- the ability to synthesize many sources of information
- viewing the world or situation holistically or globally
- having strong opinions and intense emotions
- possessing a variety of learning styles
- taking on the problems of the world
- a finely-tuned nervous system which responds quickly to multiple sensory and affective stimuli
- seeking more knowledge, deeper meaning, opportunities to use their talents and gifts
- possess a variety of personality profiles

Keeping these general characteristics in mind, the teachers and parents become talent scouts. They look for children who frequently demonstrate combinations of these traits. Those students who consistently exhibit the characteristics, require 'profiling' to bring together information from the following sources:

1. past academic performances
2. student cumulative record
3. past or present student service and/or psychological assessments
4. teacher and parent referrals
5. student self appraisals
6. portfolio assessments
7. intelligence and achievement scores (i.e., C-CAT, WISC III, standardized provincial examinations etc.)
8. interview with students and parents

Once the profile has been developed and the student has been identified as gifted or talented, an individual program plan (IPP) must be created. It is now a mandatory requirement of Alberta Education. These IPPs are a specialized way of dealing with specialness, of enabling the ordinary classroom to deal with the extraordinary child. This plan is not a description of everything that will be taught to a student, nor is it the goals and objectives of an educational plan for ALL students. It is not a means to monitor the effectiveness of teachers, a daily plan or a report card. Rather it is "a written commitment of intent by an educational team. It is meant to ensure the provision of appropriate programming for students with special needs and to act as a working document" (Alberta Education. Teaching Students Who are Gifted and Talented, Draft, 1997).

Based on the information in the student's profile, an IPP is generated. The IPP should include short-term objectives, strategies and learning activities, as well as indicators of success and evaluation. It serves as the 'road map' in meeting an individual student's needs. This is a living document which requires continuous modification. As a student successfully achieves his/her goal, new goals and directions can be considered and conversely should a student not meet a certain goal, timeline etc., adjustments to the plan can be made.

The creation of this document provides opportunity for parents, teachers and students to collaboratively dialogue in addressing the special needs of the gifted and talented. This conversation will also remain open as the need to alter and/or revise the IPP presents itself.

The IPP also serves to smooth a student's transition from grade to grade, and from teacher to teacher. While somewhat time-consuming in its initial drafting and subsequent monitoring, the dividends pay off in having a document that student, parent and teachers can rely upon in their attempt to provide continuity, consistency and challenge in the provision of a program commensurate with an individual's needs.

A Brief Overview of Dabrowski's Theory of Positive Disintegration and Its Relevance for a Gifted Population

William Tillier
Alberta Justice

Abstract

Dabrowski presents a theory of personality development based on a multilevel, hierarchical view of life. The theory suggests individual developmental potentials are important factors in determining the course of personality growth. Developmental potential includes; special talents and abilities, a physiological measure of neural reactivity called overexcitability (OE) and a feature describing autonomous will to develop. Individuals with strong developmental potential tend to experience frequent and intense crises (positive disintegrations) that create opportunities for the development of an autonomous, self-crafted personality. Dabrowski observed that gifted and creative populations exhibit increased overexcitability and thus are predisposed to experience positive disintegration. This paper provides a brief overview of Dabrowski's theory and discusses its relevance for gifted individuals.

Kazimierz Dabrowski (1902–1980) advanced a theory of individual personality development based on a progression from an initial, "lower" integration, through a sequence of disintegrations, culminating in a second, higher integration (see note one). Dabrowski called his work the Theory of Positive Disintegration to reflect the central and positive role disintegration plays in development. He believed that some individuals are predisposed to experience life more intensely and this predisposes them to frequent and severe crisis. This heightened sensitivity is based on genetic characteristics Dabrowski called developmental potentials. The presence of increased sensitivity combined with crises (disintegration) represent an increased opportunity to develop to advanced levels of personality.

In his research, Dabrowski found that gifted and creative individuals tend to exhibit higher levels of developmental potential and therefore are predicted to experience increased disintegration and personality growth. This is the basis of recent applications of the theory to the gifted (see note two). This paper will discuss Dabrowski's basic ideas and apply his theory to the gifted.

Dabrowski's Theory

Dabrowski observed that most people live their lives in a state of primitive integration guided by their biological impulses (first factor) and/or by uncritical adherence to social convention (second factor). He called this initial integration Level I. Creative expression at Level I is influenced and constrained by these first two factors. First factor tends to channel giftedness and creativity towards accomplishing self-serving goals. Often these talents are used in antisocial ways. For example, many criminals display this selfish creativity in the service of advancing their goals at the expense of others. The second factor constrains individual creativity by encouraging a group view of life and discouraging unique thought and expression. Second factor shapes creativity into forms that follow and support the social status quo of the time.

Dabrowski also described a group of people who display an individualized developmental pathway. These people break away from an automatic, socialized view of life (what Dabrowski called "negative

adjustment") and move into a series of disintegrations. If development continues, people go on to develop an individualized, conscious and critically evaluated hierarchical value structure (called "positive adjustment"). This hierarchy of values comes to act as a benchmark by which all things are seen and that directs behaviour. These higher, individual values characterize a second integration reflecting individual autonomy. At this level, each person develops their own vision of how life ought to be. This higher level is associated with strong individual approaches to problem solving and creativity. Giftedness and creativity are applied in the service of these higher individual values and visions of how life could be. The individual expresses their talents energetically, through action, though art, through social change, etc.

Advanced development is seen in people who exhibit strong developmental potential. Developmental potential represents a constellation of genetic features, expressed and mediated through environmental interaction, that consist of three major aspects: overexcitability (OE), specific abilities and talents, and a strong drive toward autonomous growth, a feature Dabrowski called the third factor.

The most evident and perhaps most fundamental aspect of developmental potential is overexcitability (OE), a heightened physiological experience of sensory stimuli resulting from increased neuronal sensitivities. The greater the OE, the more intense the sensory experience of life. In short, the individual is more sensitive to experiences in life. Dabrowski presented five forms of OE: psychomotor, sensual, imaginational, intellectual and emotional. These overexcitabilities, especially the latter three, often cause a person to experience day-to-day life more intensely and to feel the extremes of the joys and sorrows of life profoundly. As mentioned, Dabrowski found that heightened overexcitability was seen in groups of gifted and creative individuals. Their intense sensual experiences, combined with imaginational and intellectual OE create a rich source of creative material. Additionally, psychomotor and emotional OE often provide strong stamina and motivation, often expressed in "bouts" of intense work and creativity.

Although based in the nervous system, overexcitabilities are expressed psychologically through the development of structures that reflect the emerging self. The most important of these conceptualizations are dynamisms: biological or mental forces that control behaviour and its development. "Instincts, drives, and intellectual processes combined with emotions are dynamisms" (Dabrowski, 1972, p. 294). With advanced development, dynamisms increasingly reflect movement toward autonomy.

The second arm of developmental potential, specific abilities and talents, tend to serve the individual's developmental level. As outlined, lower levels "use" talents to support egocentric goals or to "climb the social and corporate ladders." At higher levels, specific talents and abilities become an important force as they are channelled by the individual's value hierarchy into expressing and achieving the person's vision of their ideal personality and their view of what "ought to be " in the world.

The third aspect of developmental potential, the third factor, is a drive towards individual growth and autonomy. Third factor is important in creativity for two reasons, it directs talents and creativity toward autonomous expression and second, it provides motivation to strive for more.

Dabrowski's theory presents five levels as shown in Table 1 (below).

Level	Name	Factor	Key Features	Life View	Example
V	Secondary Integration	THREE	Harmonious autonomy, volitional behaviour based on personality ideal, empathy, internal values	ML	Jesus, Buddha
IV	Organized Multilevel Disintegration	three	Individual takes control over their crises and development	ML	A. Saint Exupery
III	Spontaneous Multilevel Disintegration	two/three	More and more aspects of life are called into question: "dominos fall"	transition	
II	Unilevel Disintegration	two	Distress: previous "certainty" of some important aspect of life begins to crumble	transition	Picasso, Sartre
I	Primitive (Primary) Integration	TWO	Harmonious, robotic, reflexive conformity to society's rules: external values, uncritically accepted	UNI	"Average person"
		ONE	Instinctual, selfish behaviour - conformity feigned out of self-interest	UNI	"Criminal"

Table I. Dabrowski's Levels

The first and fifth level are characterized by psychological integration, harmony and little inner conflict. As outlined above, the first level is called primitive or primary integration and consists of people who show either prominent First Factor ("heredity" / impulse) and/or Second Factor ("social environment"). The majority of people at Level I are integrated at the environmental or social level (Dabrowski called them "average" people), however, many also exhibit shades of both impulse and socialization. Dabrowski distinguished the two subgroups of Level I by degree, "the state of primary integration is a state contrary to mental health. A fairly high degree of primary integration is present in the average person; a very high degree of primary integration is present in the psychopath" (Dabrowski, 1964, p. 121). (see note three).

Levels II, III and IV describe various levels and types of disintegration. The character of Level II is reflected in its name: Unilevel Disintegration. The prominent feature of this level is an initial, brief, and often intense crisis or series of crises. Crises are spontaneous and only occur on one level (and often involve only one dimension). "Unilevel disintegration occurs during developmental crises such as puberty or menopause, in periods of difficulty in handling some stressful external event, or under psychological and psychopathological conditions such as nervousness and psychoneurosis. Unilevel disintegration consists of processes on a single structural and emotional level; there is a prevalence of automatic dynamisms with only slight self-consciousness and self-control" (Dabrowski, 1964, p. 6). Conflicts on the same level (horizontal) produce ambitendencies and ambivalences: the person is pulled between different but equivalent choices (ambitendencies) and is not able decide what to do (ambivalence). Ultimately, the individual is thrust into an existential crisis: their social rationales no longer account for their experiences and no alternate explanations

exist. During this phase, existential despair is the predominant emotion. The resolution of this phase begins as individually chosen values are integrated into a "new" hierarchy of personal values. These new values often conflict with the person's previous social values. Many of the "status quo" explanations for the "way things are," learned through education and from the social order collapse under conscious, individual scrutiny. This causes more conflicts focused on the individual's analysis of their own reactions to the world at large and of the behaviour of others. Common behaviours and the ethics of the prevailing social order become seen as inadequate, wrong or hypocritical. "Positive maladjustment" prevails. For Dabrowski, these crises represent a strong potential for development toward personal growth and mental health. Using a positive definition, mental health reflects more than social conformity, it involves a careful, personal examination of the world and of one's values leading to the development of an individual personality.

The expression of positive maladjustment can often be seen in both individual creativity and in creative movements at this level. For example, Cubism and Dadaism, with their chaotic forms are examples of creativity expressing positive maladjustment - the rejection and overthrow of the "standard views" of art and life.

Level II is a transitional period. Dabrowski said you either fall back, move ahead or end negatively, in suicide or psychoses. "Prolongation of unilevel disintegration often leads to reintegration on a lower level, to suicidal tendencies, or to psychosis" (Dabrowski, 1964, p. 7).

The transition from level II to level III involves a fundamental shift that requires a phenomenal amount of energy. This period is the crossroads of development as from here one must either progress or regress. The struggle between Dabrowski's Factors reflect this transitional crisis: "Do I follow my instincts (First Factor), my teachings (Second Factor) or my heart (Third Factor)?" The developmental answer is to transform your lower instincts (automatic reactions like anger) into positive motivation, to resist rote, social answers and to listen to your own, inner sense of "what you ought to do."

Level III describes the vertical conflicts caused by an involuntary perception of higher versus lower choices in life (because it is involuntary, Dabrowski called it *spontaneous* multilevel disintegration). Dabrowski called this vertical dimension multilevelness. Multilevelness is a gradual realization of the "possibility of the higher" (a phrase Dabrowski used frequently) and of the subsequent contrasts between the higher and the lower in life. These vertical comparisons often illustrate the lower, actual behaviour of a person in contrast to higher, imagined ideals and alternate choices. When a person perceives the higher choice, it becomes obvious that this is the path one ought to follow. When the person's actual behaviour falls short of the ideal, disharmony and a drive to review and reconstruct one's life often follow. Multilevelness thus represents a new and powerful type of conflict, a conflict that is potentially developmental.

These vertical conflicts are critical in leading to autonomy and advanced personality growth. If the person is to achieve higher levels, the shift to multilevelness must occur. If a person does not have the developmental potential to move into a multilevel view, then they would fall back from the crises of Level II to reintegrate at Level I.

In the shift to multilevelness, the "horizontal" (unilevel), stimulus-response model of life is replaced by a vertical and hierarchical analysis. This vertical view becomes anchored by one's emerging individual value structure and all events are seen in relation to personal ideals. These personal value ideals become the personality ideal: how the person wants to live their life. As events in life are seen in relation to this multilevel, vertical view, it becomes impossible to support positions that favour the lower course when higher goals can be identified (or imagined).

In level IV the individual takes full control of their development. The involuntary spontaneous development of level III is replaced by a deliberate, conscious and self-directed review of life from the multilevel perspective. This level marks the emergence of "the third factor," described by Dabrowski as an autonomous factor "of conscious choice (valuation) by which one affirms or rejects certain qualities in oneself and in one's environment" (Dabrowski, 1972, p. 306). The person consciously reviews their existing belief system and tries to replace their lower, automatic views and reactions with carefully thought-out, examined and chosen ideals. These "new" values will increasingly be reflected in the person's behaviour. Behaviour becomes less reactive, less automatic, and more deliberate as behavioural choices fall under the influence of the person's higher, chosen ideals:

One's social orientation comes to reflect a deep responsibility based on both intellectual and emotional factors. At the highest levels, "individuals of this kind feel responsible for the realization of justice and for the protection of others against harm and injustice. Their feelings of responsibility extend almost to everything" (Dabrowski, 1973, p. 97). This perspective results from seeing life in relation to one's hierarchy of values (the multilevel view) and the subsequent appreciation of the potential of how life could be, and ought to be, lived. Your disagreements with the (lower level) world are expressed compassionately in doing what you can to help achieve the "ought."

Given their genuine (authentic) pro-social outlook, those individuals achieving higher development would also raise the level of their society. "Pro-social" here is not just support of the existing social order. If the social order is "lower" and you are adjusted to it, then you also reflect the lower ("negative adjustment" in Dabrowski's terms, a Level I feature). Here, pro-social is a genuine cultivation of social interactions based on higher values. These positions often conflict with the status quo of a lower society ("positive maladjustment"). In other words, to be maladjusted to a low level society is a positive feature.

The fifth level displays an integrated and harmonious character, but one vastly different from that at the first level. At this highest level, one's behaviour is guided by conscious, carefully weighed decisions based upon an individualized and chosen hierarchy of personal values. Behaviour conforms to this inner standard of how life "ought" to be lived and thus, little inner conflict arises in one's life.

Creative expression and the accomplishments of the gifted find their most individual expression at Levels IV and V. Especially at Level V, problem solving and art come to represent the highest and Noblest features of Human life. Art captures the inner most emotional states and is based upon a deep empathy and understanding of the subject. Often Human suffering and sacrifice are the subjects of these works. Truly visionary works, works that are unique and novel, are created by individuals expressing a vision unrestrained by convention. Advances in society, through politics, philosophy, Religion are therefore commonly associated with strong individual creativity or accomplishments.

Applications of the Theory of Positive Disintegration

The Theory of Positive Disintegration (TPD) has an extremely broad scope and has implications for many areas. One central application applies to psychological and psychiatric diagnosis and treatment. Dabrowski advocated a comprehensive, multilevel diagnosis of the person's situation, including their symptoms and their developmental potentials. If the disintegration appears to fit into a developmental context, then the person is educated in the theory and encouraged to take a developmental view of their situation and experiences. Rather than trying to eliminate symptoms, they are reframed to yield insight and understanding into life and the person's unique situation. Dabrowski illustrated his theory in the autobiographies of, and biographies about, those who have experienced positive disintegration and he

encouraged autobiography as a step in the process of autopsychotherapy. For Dabrowski, the goal of therapy is to eliminate the therapist by providing a context within which a person could understand and help themselves. The gifted child, or the suicidal teen, or the troubled artist is the expert of the TPD and if they accept and understand the meaning of their feelings and crises, they can move ahead, not fall apart.

A second primary focus is on education, and in particular, on the experience of creative or gifted students. Dabrowski hypothesized that these students will disproportionately show strong overexcitability and therefore will be prone to the disintegrative process.

Dabrowski and the Gifted Individual

In an appendix to Dabrowski (1967), results of investigations done in 1962 with Polish youth are reported (see note four). Specifically, "a group of gifted children and young people, aged 8 to 23" were examined (Dabrowski, 1967, p. 251). Of the 80 youth studied, 30 were "intellectually gifted" and 50 were from "drama, ballet, and plastic art schools" (Dabrowski, 1967, p. 251). Dabrowski found that "every one" of the children displayed overexcitability, "which constituted the foundation for the emergence of neurotic and psychoneurotic sets. Moreover it turned out that these children also showed sets of nervousness, neurosis, and psychoneurosis of various kinds and intensities, from light vegetative symptoms, or anxiety symptoms, to distinctly and highly intensive psychasthenic or hysterical sets" (Dabrowski, 1967, p. 253). Dabrowski asked why these children should display such "states of nervousness or psychoneurosis" and suggested that it was due to the presence of OE (Dabrowski, 1967, p. 255). "Probably the cause is more than average sensitivity which not only permits one to achieve outstanding results in learning and work, but at the same time increases the number of points sensitive to all experiences that may accelerate anomalous reactions revealing themselves in psychoneurotic sets" (Dabrowski, 1967, p. 255).

The association between OE and giftedness appears to be borne out in the research (Lysy & Piechowski, 1983; Piechowski, 1986; Piechowski, & Miller, 1995). It appears that at the least OE is a marker of potential for gifted / creativity. The basic message of Dabrowski is that the gifted will disproportionately display this process of positive disintegration and personality growth.

The Environment and the Gifted

Today, the importance of the interaction of the individual with the environment is well recognized. "From infancy onwards, genetic individuality helps to steer the developing organism through the multitude of possible [environmental] experiences and choices" leading to a "nature via nurture" position (Bouchard, Lykken, McGue, Segal, & Tellegen, 1990). In this view, the dynamic interaction is an important factor and the effect that the individual has on shaping his or her experience is recognized.

Dabrowski suggested that "there are very few people among us who are consciously independent of the external environment" (Dabrowski, 1967, p. 12). Most people generally take what the environment gives them for granted and the interactive components play out their dynamics on an unconscious stage: Dabrowski's second factor. How we live largely depends on what happens to us and our behaviour is largely reactive and unconscious. Once positive disintegration begins, this changes. A person's "relation to his environment becomes more and more conscious, clear, and determined. He selects from it elements on which he places value. He becomes more independent," gradually moving toward third factor (Dabrowski, 1964, pp. 61-62).

The presence of OE increases the significance of the role played by the person-environment interaction. As a person's confidence in their developing personality becomes stronger, one comes to choose

their environment more consciously, deciding what in the environment to respond to and how. While rejection of unacceptable environmental features may cause further developmental conflict, it is also an important aspect of the emerging autonomous personality. As development proceeds, the environment shapes the person less while the person shapes the environment more.

Opinion on the ideal environment for the gifted is divided into two basic themes. One is a stress-free setting where things are as positive, accepting and pressureless as possible -- the "bullish environment"(Sternberg & Lubart, 1995). The other approach is called the "bearish environment" (Sternberg & Lubart, 1995). Here, obstacles arise that challenge the individual. Successfully mastering these obstacles strengthens the character and abilities of the person. Sternberg reviews these positions and concludes that "it helps to have a generally favorable environment sprinkled with some obstacles along the way" (Sternberg & Lubart, 1995, p. 256). However, in Dabrowski's theory, this dichotomy does not reflect the real complexity involved in understanding creativity. For Dabrowski, several critical elements are involved, including the physiological reaction of the individual to the environment (OE), the dynamic interplay of the person with the environment, and any resultant conflicts and disintegrations that arise.

Dabrowski emphasized the role of environmental events would be most important when genetic dispositions are equivocal. When genetic potentials are strong, environment plays less of a role. Dabrowski said "the worst environment will not stop the strongest genetics, the best environment cannot overcome the worst genetics."

Developmental Potential: A Mixed Blessing?

Dabrowski called OE "a tragic gift" to reflect that the road of the person with strong OE is not a smooth or easy one (Rankel, 1996). Potentials to experience great highs are also potentials to experience great lows. Similarly, potentials to express great creativity simultaneously hold the likelihood of experiencing a great deal of personal conflict and stress. This stress both drives development and is a result of developmental conflicts, both intrapsychic and social. Suicide is a significant risk in the acute phases of this stress. The isolation often experienced by these young people heightens the risks of self-harm (see note five). Dabrowski advocated educating the person about OE and the disintegrative process to give them a context within which to understand their intense feelings and needs. This context is a positive and developmental one. Dabrowski suggested that the individual be given support in their efforts to develop and find their own self-expression. To be out of step is encouraged and seen as a feature of the overall developmental journey. Social maladjustment is also encouraged, particularly when it is positive and based on individually thought-out values. Young people who are seen as "squares" because they prefer to study instead of partying are an example. Many of these children have to "find and walk their own path" often at the expense of fitting in with their social peers and even with their families.

Piechowski, and subsequently Silverman, have begun the process of measuring OE in the gifted (see note six). These are important first steps in applying a Dabrowskian approach to the gifted. Other exciting avenues remain to be explored, for example, efforts to counsel the gifted to help make their overexcitability and disintegrations positive.

A Case Study

> M ----, a girl 10 years old of asthenic-schizothymic type, had marked mathematical and scientific abilities and was dutiful, with a tendency to be overly so.
> After good progress in one school she was moved to another, more extroverted system, where the teachers were prone to superficial appreciation of their students, basing their opinions on the pupil's boldness and originality.
> M ----, a rather shy girl with excessive inhibitions, withdrew from these new conditions and for several weeks showed both shyness and anxiety. She obtained marks that were fairly good, but much

lower than in her former school. Her anxieties increased; she became resentful, slept badly, lost weight, and was either irritable or withdrawn.
After several months her marks improved, although she lost confidence in some of her teachers. When her parents discussed with her the possibility of moving to another class or another school, she replied: 'It seems to me that in another class or school there will be similar teachers. I don't want to change. Always, only some of the teachers and some of the other students will like me. That's the way people are, and that's the way I am.' In this case, disintegration occurred in an ambitious girl with a strong sense of justice, resulting in withdrawal and resentment. The fact that she did not wish to transfer to another class or school seems to be explained by emotional exhaustion and, at the same time, an increasingly realistic attitude toward the environment and patterns of interaction with it. This is a sign of partial, still insufficient, but clear rebuilding. Secondary integration is evident in M ----'s new appreciation of herself and others but is still combined with a feeling of disappointment and a certain degree of compromise." (Dabrowski, 1964, p. 105).

Conclusion

It is beyond this paper to explore Dabrowski's theory fully. The central point is that Dabrowski saw the gifted as a special subset of people, a subset prone to experience positive disintegration. This opportunity presents both creative possibilities and risks to the developing self. If the individual fails to navigate these risks, a sad outcome of underachievement, addiction or suicide is possible. To avoid this, Dabrowski advocated providing a supportive and encouraging environment. Additionally, he suggested the individual be provided with the developmental context of positive disintegration. We cannot ease the experience of OE or the literal pain of development. Still, we can and must give it context and shepherd our gifted youth through the height of their developmental crises. Individual creativity and expression of talent must be valued as an expression of higher personality development.

Note one: Dabrowski's theory is presented in: Dabrowski, 1937, 1964, 1966, 1967, 1970, 1972,1973, and 1996.

Note two: Recent applications to the gifted are represented by the following research: Brennan & Piechowski, 1991; Lewis, Kitano, & Lynch, 1992; Miller, Silverman, & Falk, 1994; Piechowski, 1974, 1975, 1978, 1979, 1986, 1989, 1991; Piechowski & Colangelo, 1984; Piechowski & Cunningham, 1985; Piechowski & Miller, 1995; Piechowski, Silverman & Falk, 1985; Silverman, 1983, 1986, 1989, 1991, 1993a, 1993b, 1994; Silverman & Schuppin, 1989.

Note three: Dabrowski's description of Level I as "psychopathic" reflects an earlier definition of the term: one that emphasized individual factors (genetic features as opposed to social factors) that act to impede a person's developmental course. This broad usage encompasses both malignant criminals and upstanding citizens who blindly and uncritically follow every social precept. This has created controversy and confusion in the theory as Dabrowski said that most of society's members live on Level I (also see Dabrowski, 1964, pp. 4-10). Other authors have introduced the term "robopath" to describe the "unauthentic life" based on a robot-like reaction to life (Bertalanffy, 1967; Yablonsky, 1972). Bertalanffy (1967), was critical of psychology's approach to the human as a lab rat. He extended his criticism to society and the structure of modern life that demands "reaching optimal psychosocial equilibrium by answering outside demands in reinforced responses" (Bertalanffy, 1967, p. 9). Bertalanffy lamented that people were losing their autonomy in a stimulus-response society, a society where an individual does not need to reflect or to think but merely to respond, a society geared to meeting external performance standards as measures of success. Yablonsky (1972) uses the term robopath "to describe people whose pathology entails robot-like behaviour and existence. Robopaths have what Kierkegaard called

'sickness unto death'" (Yablonsky, 1972, p. 7). Yablonsky says that robopaths are "socially dead" and function based on "pseudo-image," they are egocentric and lack compassion for others. "Their existential state is ahuman" (Yablonsky, 1972, p. 7). Yablonsky elaborates how our modern society encourages "the emergence of robopathology." Also relevant is Rieber (1997) and his views on the "normalized psychopathy" of today's culture. These descriptions, especially Bertalanffy's and Rieber's, appear to apply to a person who follows precepts uncritically and who simply "follows orders" in living life - Dabrowski's idea of the second factor.

Note four: The appendix is titled: "Personality, outstanding abilities, and psychoneurosis in children and young people"

Note five: Self-harm is a common feature of those with high developmental potential (Dabrowski, 1937).

Note six: Recent research on measuring overexcitability includes: Brennan & Piechowski, 1991; Miller, Silverman, & Falk, 1994; Piechowski, 1974, 1975, 1978, 1979, 1986, 1989, 1991; Piechowski & Colangelo, 1984; Piechowski & Cunningham, 1985; Piechowski & Miller, 1995; Piechowski, Silverman & Falk, 1985; Silverman, 1983, 1986, 1989, 1991, 1993a, 1993b, 1994; Silverman & Schuppin, 1989.

References

Bertalanffy, L. von. (1967). *Robots, men and minds: Psychology in the modern world.* New York: George Braziller.

Bouchard, T. J., Lykken, D. T., McGue, M., Segal, N. L., & Tellegen, A. (1990). Sources of human psychological differences: The Minnesota study of twins reared apart. *Science, 250,* 223-228.

Brennan, T., & Piechowski, M. M. (1991). A developmental framework for self-actualization: Evidence from case studies. *Journal of Humanistic Psychology, 31*(3), 43-64.

Dabrowski, K. (1937). Psychological basis of self-mutilation. *Genetic Psychology Monographs,19,* 1-104.

Dabrowski, K. (1964). *Positive disintegration.* Boston: Little Brown.

Dabrowski, K. (1966). The theory of positive disintegration. *International Journal of Psychiatry, 2,* 229-244.

Dabrowski, K. (1967). *Personality-shaping through positive disintegration.* Boston: Little Brown.

Dabrowski, K., with Kawczak, A., & Piechowski, M. M. (1970). *Mental growth through positive disintegration.* London: Gryf.

Dabrowski, K. (1972). *Psychoneurosis is not an illness.* London: Gryf.

Dabrowski, K. (1973). *Developmental psychotherapy: Psychotherapy based on the theory of positive disintegration.* Unpublished manuscript.

Dabrowski, K. (1996). *Multilevelness of emotional and instinctive functions.* Lublin, Poland: Towarzystwo Naukowe Katolickiego Uniwersytetu Lubelskiego.

Lewis, R. B., Kitano, M. K., & Lynch, E. W. (1992). Psychological intensities in gifted adults. *Roeper Review, 15*(1), 25-31.

Lysy, K. Z., & Piechowski M. M. (1983). Personal growth: An empirical study using Jungian and Dabrowskian measures. *Genetic Psychology Monographs, 108,* 267-320.

Miller, N. B., Silverman, L. K. & Falk, R. F. (1994). Emotional development, intellectual ability, and gender. *Journal for the Education of the Gifted, 18*(1), 20-38.

Piechowski, M. M. (1974). Two developmental concepts: Multilevelness and developmental potential. *Counseling and Values, 18*(2), 86-93.

Piechowski, M. M. (1975). A theoretical and empirical approach to the study of development. *Genetic Psychology Monographs, 92,* 231-297.

Piechowski, M. M. (1978). Self-Actualization as a developmental structure: A profile of Antoine de Saint-Exupery. *Genetic Psychology Monographs, 97,* 181-242.

Piechowski, M. M. (1979). Developmental potential. In N. Colangelo & R. T. Zaffrann (Eds.), *New Voices in Counseling the Gifted* (pp. 25-57). Dubuque: Kendall/Hunt.

Piechowski, M. M. (1986). The concept of developmental potential. *The Roeper Review, 8*(3), 190-197.

Piechowski, M. M. (1989). Developmental potential and the growth of self. In J. Van Tassel Baska & P. Olszewski Kubilius (Eds.), *Patterns of Influence on Gifted Learners: The Home, School and the Self* (pp. 87-101). New York: Teachers College Press.

Piechowski, M. M. (1991). Emotional development and emotional giftedness. In N. Colangelo & G. Davis (Eds.), *A Handbook of Gifted Education* (pp. 285-306). Boston: Allyn & Bacon.

Piechowski, M. M., & Colangelo, N. (1984). Developmental potential of the gifted. *Gifted Child Quarterly, 28*(2), 80-88.

Piechowski, M. M. & Cunningham, K. (1985). Patterns of overexcitability in a group of artists. *Journal of Creative Behavior, 19*(3), 153-174.

Piechowski, M. M., Silverman, L. & Falk, F. (1985). Comparison of intellectually and artistically gifted on five dimensions of mental functions. *Perceptual and Motor Skills, 60*(2), 539-549.

Piechowski, M. M., & Miller, N. B. (1995). Assessing developmental potential in gifted children: A comparison of methods. *Roeper Review, 17*(3), 176-180.

Rankel, M. (April 6, 1996). Personal communication.

Rieber, R. W. (1997). *Manufacturing social distress: Psychopathy in everyday life.* New York: Plenum Press.

Silverman, L. K. (1983). Personality development: The pursuit of excellence. *Journal for the Education of the Gifted, VI*(1), 5-19.

Silverman, L. K. (1986). Personality development and the gifted. *Mensa Bulletin,* (September), #299, 14-16.

Silverman, L. K. (1989). Career counseling for the gifted. In J. Van Tassel Baska & P. Olszewski Kubilius (Eds.), *Patterns of Influence on Gifted Learners: The Home, School and the Self* (pp. 201-213). New York: Teachers College Press.

Silverman, L. K. (1991). Family counseling. In N. Colangelo & G. Davis (Eds.), *Handbook of Gifted Education* (pp. 307-320). Boston: Allyn & Bacon.

Silverman, L. K. (Ed.). (1993a). *Counseling the gifted and talented.* Denver: Love Publishing.

Silverman, L. K. (1993b). Counseling needs of the gifted. In K. Heller, F. Monks & A. H. Passow (Eds.), *The international handbook of research and development of giftedness and talent.* Oxford, UK: Pergamon.

Silverman, L. K. (1994). The moral sensitivity of gifted children and the evolution of society. *Roeper Review, 17*(2), 110-116.

Silverman, L. K., & Schuppin, E. (1989). Inner conflict as a path to higher development in women. *Mensa Research Journal, 27,* 42-49.

Sternberg, R. J. & Lubart, T. I. (1995). *Defying the crowd: Cultivating creativity in a culture of conformity.* New York: Free Press.

Yablonsky, L. (1972). *Robopaths.* New York: Bobbs-Merrill Company.

Eminent Canadian, Finnish and Korean Women: Reflections on Life Satisfaction

Carolyn Yewchuk • University of Alberta
Seija Aysto • Jyvaskyla University, Finland
Seokhee Cho • Korean Educational Development Institute

Historically the study of eminence has been conducted from an essentially male perspective (Simonton, 1994). Productive male scientists, for example, have been found to derive satisfaction from deep intellectual engagement and the recognition associated with influential discoveries. The degree to which women scientists resemble or differ from this profile, however, has not been established (Subotnik & Arnold, 1995). Studies of highly achieving women have shown that the factors identified as being operative in the life satisfaction of males may not be the same as for females. Traditionally, life satisfaction has been linked to career success for men, and marriage and children for women (Duxbury & Higgins, 1991; Tait, Padgett & Baldwin, 1989; Wood, Rhodes & Whelan, 1989). Studies in the United States (Holahan, 1981; Schuster, 1990; Subotnik & Arnold, 1995) and Canada and Israel (Leroux & Butler-Por, 1996), however, have shown that both career and family are associated with life satisfaction of highly achieving women.

Life satisfaction is a personal sense of well-being, happiness, or quality of life. It is associated with having positive attitudes and feelings about various aspects of our lives. Diener (1984) suggests that three aspects are inherent in definitions of life-satisfaction:

- external/normative criteria, or the value framework of one's culture or society;
- internal/subjective criteria, or one's personal assessment regarding what constitutes quality of life based upon one's own chosen criteria, and the degree to which these criteria are achieved; and
- internal/emotional state, or the degree to which one experiences pleasant emotions during life's activities. The internal/emotional aspect includes Czikszentmihalyi's (1990) conceptualization of life satisfaction as related to "flow," that state of being between boredom and anxiety, where the challenge of the activity matches the skills of the participant.

Together, Diener's three measures are useful in identifying what constitutes life satisfaction for an individual and provide measures for determining quality of life. The purpose of this paper is to present an analysis of the responses of eminent Canadian, Finnish and Korean women to questions about their satisfaction with themselves and their accomplishments, as well as more generally with their lives as a whole.

Method

Instrument. A written questionnaire was developed in Canada by the first author and subsequently translated and administered by the co-authors, resident in Finland and Korea, respectively. Although the questionnaire consisted of a wide range of questions about career and life experiences, only the data gathered in the three-part segment dealing with life satisfaction are reported in this paper.

Participants. The total sample of eminent women included 827 Canadians (53.3% rate of return), 280 Finns (66% return) and 40 Koreans (10% return). Potential Canadian and Finnish participants were derived from the Who's Who publications in their respective countries, but for Korea, because of the lack of a comparable publication, a list of eminent women was compiled through informal consultation and inquiry conducted by the third author.

The age of the respondents ranged from under 35 to over 65. On average, the Canadian sample was the youngest, and the Finnish sample the oldest. The median ages were: Canada, 44; Finland, 60; and Korea, 51. Thus, typical Canadian and Korean respondents were at the height of their careers, while typical Finnish women were of retirement age.

The marital status of the Canadian and Finnish respondents was remarkably similar, except for the category of "widowed," which is not surprising, given the relatively older age of the Finnish group. None of the Korean women reported being divorced, and 82% were married (living with, or separated from, spouse) compared to their Canadian (61%) and Finnish (58%) counterparts. The proportion of single women was similar in all 3 countries (13 - 19%). The percentage of women having children was 55% (Canadian), 71% (Finnish) and 85% (Korean). The lower rate for Canadians may reflect their younger age; approximately half were still in their childbearing years.

Results and Discussion

There were three parts to the life satisfaction segment of the questionnaire. In the first part, the women were asked how well they thought they had lived up to their intellectual abilities. The Korean respondents were most positive in their judgments: 65.0% believed that they had lived up to their potential "fully," in contrast to 23.0% of Canadians and 31.8% of Finns. On the whole, the evaluations of the Canadian and Finnish women were more modest: 71.3% of the former and 63.6% of the latter believed that they lived up to their potential "reasonably well," compared to 25.0% of Korean women. The combined figures for each data set were: Canadians 94.3%; Finns 95.4%; Koreans 90.0%. In all three countries, less than 5% of respondents felt that they had not lived up to their intellectual potential.

The second part of the segment focused on how satisfied the eminent women were with their choice of vocation. The results indicated that the majority of women in each country were "deeply satisfied and interested," with a substantial percentage "fairly content": Canada 56.1% and 33.4%; Finland 73.9% and 23.2%; Korea 55.0% and 27.5%, respectively. When the figures are combined, 89.5% of Canadian, 97.1% of Finnish, and 82.5% of Korean respondents were satisfied with their choice of occupation. Less than 3% of women in each country expressed dissatisfaction with their jobs.

In the third part, the focus was on satisfaction with 10 selected aspects of the women's lives relating to work, family, personal/spiritual, and social variables. The women were asked to indicate the importance of each aspect to their experience of satisfaction in life. The rank-ordered results are presented for each set of respondents in Table 1.

It is apparent from the table that there is limited consensus among the eminent women about the most satisfying aspects of their lives. Of the ten variables, only two received consistent ratings from all three sets of women: performing work (ranked 1 or 2) and life itself (ranked 2 or 3). For the other variables, there was considerably greater variation in the rankings across countries.

Table 1: Rank Order of Satisfaction Source

	Canada	Finland	Korea
Work-related			
performing work	2	1	1
recognition for accomplishments	1	3	10
income	4	9	7.5
Family-related			
children	8	4	3.5
marriage	7	6	3.5
Personal/spiritual			
life itself	3	2	2
avocational activities/hobbies	5	7	7.5
religion	10	10	5.5
social			
community service	9	8	5.5
social contacts	6	5	9

Note: n = Canada 827; Finland 280; Korea 40.

Our expectation that career-related variables would be judged very important by the eminent women is partially supported by the results. The Canadian women derived considerable satisfaction from all three variables. For Finnish women, two of the variables, performing work and recognition for accomplishments, were highly-ranked sources of satisfaction, while for Korean women, only performing work was considered important. The results suggest that the intrinsic satisfaction of doing one's job well is greater than the extrinsic satisfaction inherent in remuneration and recognition of one's accomplishments. These results might also reflect national differences in gender pay inequity (Kauppinen-Toropainen, Kandolin, & Haavio-Mannila, 1988; Kim, 1994) and under-representation of women among higher management. Data compiled by the United Nations Development Programme (1997) indicates that the percentage of women administrators and managers is highest in Canada (42.2%), lower in Finland (26.4%), and lowest in Korea (4.2%).

Marriage and children, the more traditional aspects of women's life work, were considered to be most satisfying by the Koreans and least satisfying by the Canadians. While Korean women could rely on extended family members for childcare (Soh, 1993), and Finnish women had access to government-subsidized daycare (Haavio-Mannila, 1981), Canadian women expressed concern about availability of quality daycare.

In the area of personal/spiritual issues, life itself brought great satisfaction to the women in all three countries. However, involvement in avocational activities/ hobbies or religion was not as salient in the women's lives. Religion was ranked 10th by Canadian and Finnish women. Social activities were ranked in the bottom half (5th to 9th) in all three countries. For many women, there just wasn't enough time in the day to volunteer their services in the community or maintain an active social life. Like many career women, the respondents were responsible for maintaining their own households in addition to holding down a full time job, leaving little time for personal and social activities.

Our findings suggest that eminent women derive satisfaction from both their careers and their families, as well as life itself. In going beyond what is considered typical, or traditional, for their gender, the few women who have achieved distinction in their society have done so in spite of conventional wisdom and practice. The risks are great, but so are the satisfactions accruing from enhanced realization of one's full potential.

References

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York: HarperCollins.

Diener, E. (1984). Subjective well-being, *Psychological Bulletin, 95*(3), 542 - 575.

Duxbury, L., & Higgins, C. (1991). Gender differences in work-family conflict. *Journal of Applied Psychology, 76*(1), 60 - 74.

Haavio-Mannila, E. (1981). Finland. In J. Lovenduski & J. Hills. (Eds.), *The politics of the second electorate.* (pp. 228 - 251). London: Routledge & Kegan Paul.

Holahan, C. K. (1981). Lifetime achievement patterns, retirement and life satisfaction of gifted aged women. *Journal of Gerontology, 36*(6), 741 - 749.

Kauppinen-Toropainen, K., Kandolin, I. & Haavio-Mannila, E. (1988). Sex segregation of work in Finland and the quality of women's work. *Journal of Organizational Behavior, 9,* 15 - 27.

Kim, S. (1994). Gender division of labor and skill as a factor of sex wage differentials. In C. Hyoung, & P. Chang (Eds.), *Gender division of labor in Korea* (pp. 106 - 134). Seoul: Ewha Women's University Press.

Leroux, J., & Butler-Por, N. (1996). Keeping faith in ourselves: A comparative study of Canadian and Israeli women's perceptions of their achievement. *Gifted and Talented International, 11*(1), 16 - 21.

Schuster, D. T. (1990). Fulfillment of potential, life satisfaction, and competence: Comparing four cohorts of gifted women at midlife. *Journal of Educational Psychology, 82*(3), 471 - 478.

Simonton, D. K. (1994). *Greatness: Who makes history and why.* New York: Guilford.

Soh, C. S. (1993). Sexual equality, male superiority, and Korean women in politics: Changing gender relations in a "patriarchal democracy." *Sex Roles, 28*(1/2), 73 - 90.

Subotnik, R. F., & Arnold, K. D. (1995). Passing through the gates: Career establishment of talented women scientists. *Roeper Review, 18*(1), 55 - 61.

Tait, M., Padgett, M., & Baldwin, T. (1989). Job and life satisfaction: A reevaluation of the strength of the relationship and gender effects as a function of the date of the study. *Journal of Applied Psychology, 74*(3), 502 - 507.

United Nations Development Programme (1997). *Human development report (1997).* New York: Oxford University Press.

Wood, W., Rhodes, N., & Whelan, M. (1989). Sex differences in positive well-being: A consideration of emotional style and marital status. *Psychological Bulletin, 106*(2), 249 - 264.

Author Note

Please direct inquiries to: Dr. Carolyn Yewchuk, Department of Educational Psychology, University of Alberta, Edmonton, AB T6G 2G5. Phone: (780) 492-1154. Fax: (780) 492-1318. Email: carolyn.yewchuk@ualberta.ca